

Single Copy Pamphlet Covers

Cover Size	Photo Mount		Leatherboard		Double-ply Filetex	
	Maximum Capacity $\frac{1}{4}"$	Maximum Capacity $1"$	Maximum Capacity $\frac{1}{4}"$	Maximum Capacity $1"$	Maximum Capacity $\frac{1}{4}"$	Maximum Capacity $1"$
7" x 5"	No. 4340	No. 4360	No. 4380	No. 4400	No. 4380DV	No. 4400DV
8" x 6"	4341	4361	4381	4401	4381DV	4401DV
9" x 6"	4342	4362	4382	4402	4382DV	4402DV
9½" x 6½"	4343	4363	4383	4403	4383DV	4403DV
10" x 7"	4344	4364	4384	4404	4384DV	4404DV
10" x 8"	4345	4365	4385	4405	4385DV	4405DV
11" x 8½"	4346	4366	4386	4406	4386DV	4406DV
12" x 8"	4347	4367	4387	4407	4387DV	4407DV
12" x 10"	4348	4368	4388	4408	4388DV	4408DV
13" x 8¼"	4349	4369	4389	4409	4389DV	4409DV
13½" x 10"	4350	4370	4390	4410	4390DV	4410DV
14" x 8½"	4351	4371	4391	4411	4391DV	4411DV
14" x 10"	4352	4372	4392	4412	4392DV	4412DV
15" x 11"	4353	4373	4393	4413	4393DV	4413DV
16" x 12"	4354	4374	4394	4414	4394DV	4414DV
17" x 11"	4355	4375	4395	4415	4395DV	4415DV
18" x 12"	4356	4376	4396	4416	4396DV	4416DV

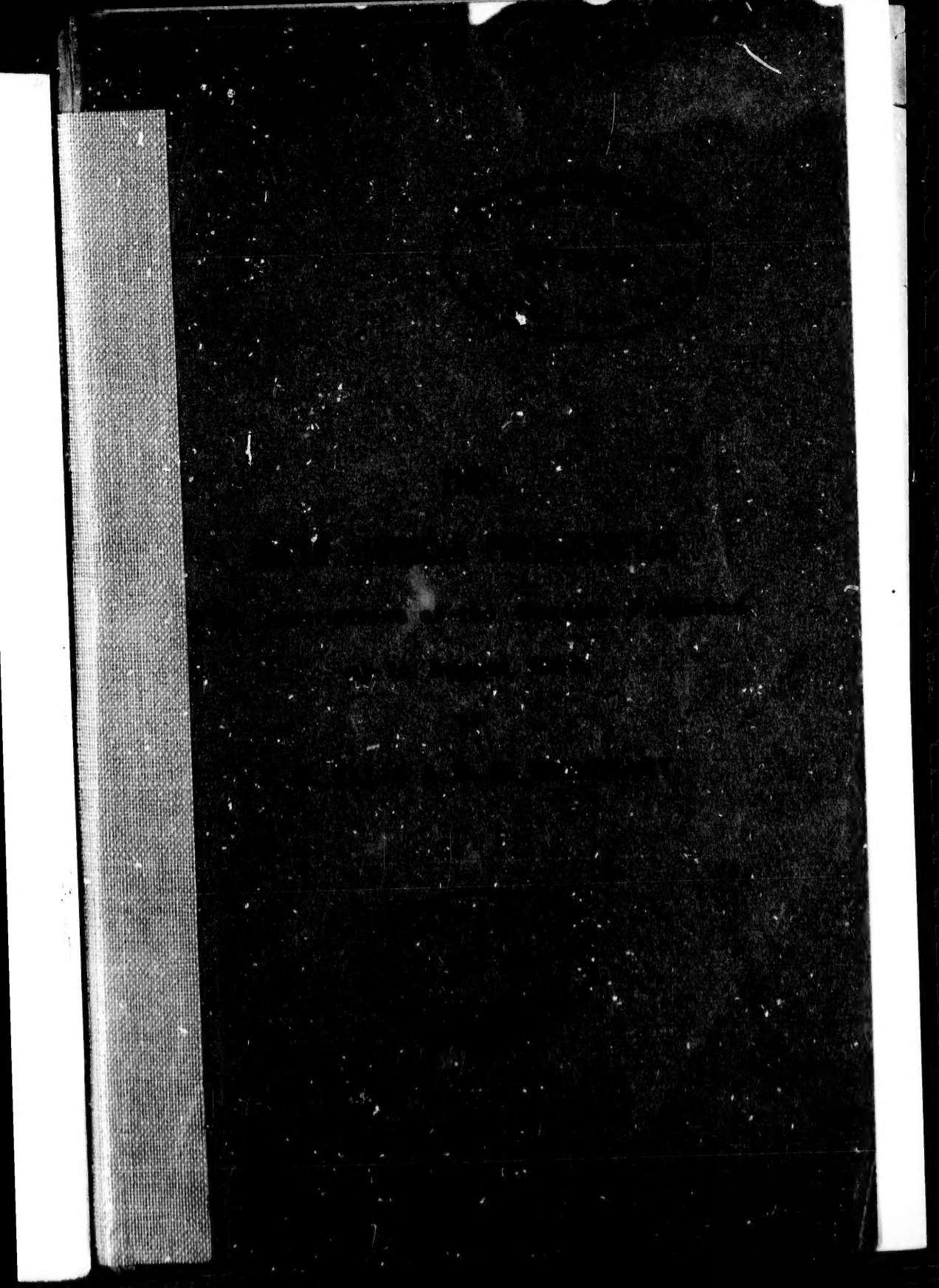
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L. Ronell

THE
NORTH AMERICAN PHYLLOSTICTAS
With Descriptions of the Species Published
up to August, 1900,

BY
J. B. ELLIS & B. M. EVERHART.

Phyllosticta, Pers.

In Fr. S. M. 2: 527. 1822.

*Perithecia subcuticular thin, membranaceous, pierced above, small, growing on discolored areas of the leaves (spots). *Sporules ovate, oblong, elliptical or globose, hyaline, basidia inconspicuous or none.

1. On leaves of dicotyledonous trees and shrubs.

1. Phyllosticta minima, (B. & C.)

Sphaeropsis minima, B. & C. Grev. 3: 2. 1874.

Phyllosticta acericola, C. & E. Grev. 8: 11. 1879.

Phyllosticta acericola, Sacc. Syll. 4: 14. 1884.

Depazea brunnea, B. & C. Grev. 4: 155. 1876?

Exsicc. Ell. N. A. F. 534. Rab. F. Eur. 3392, Ell. & Evrht. F. Col. 660. Sydow Mycotheca Marchien, 1486, 3878.

On leaves of *Acer rubrum*, common where that tree is found.

Epiphyllous. Spots subcircular, 2-5 mm. diam. reddish-brown, becoming pale in the center with a purplish-red border, the whole included within a narrow, slightly raised, circumscribing line. Perithecia oftener marginal on the spots, small, slightly prominent above, visible also below, 100-130 μ diam. black. Sporules, globose, 8-9 x 5-6 μ .

*Perithecia and Sporules being of prime importance are made to begin with capitals to help one more readily to refer to either of these characters without going through the whole description.

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2. *Phyllosticta abortiva*, E. & K.

Journ. Mycol., 1: 4. 1885, id. 2: 13. 1886.

On leaves of *Menispermum Canadense*, Kansas (Kellerman.)

Spots brown, subcircular, .25-1 cm., with a definite, darker colored, scarcely raised margin. Perithecia innate, punctiform, minute, black and thickly scattered over the spots on both sides of the leaves. Sporules imperfectly developed.

3. *Phyllosticta viridis*, E. & K.

Journ. Mycol. 5: 142. 1889.

Exsicc. Ell. & Evrht. N. A. F. 2834. Ell. & Evrht. F. Col. 1138.

On leaves of *Fraxinus viridis*, Kansas (Bartholomew.)

On large subindefinite, (.5-1 centimeter) spots visible on both sides of the leaf with a paler shaded margin. Perithecia hypophyllous, numerous, suberumpent, small, 65-80 μ , of rather coarse cellular structure. Sporules abundant, oblong, minute (2 x .5 μ). The spots much resemble those of *P. Fraxini* E. & M., but that has sporules 5-7 by 2.5-3 μ and much larger epiphyllous perithecia.

4. *Phyllosticta fraxinicola*, Curr.

Curr. Linn. Trans. 333. 1859.

Phyllosticta Fraxini, E. & M. Am. Nat. 18: 189. 1884.

Journ. Mycol. 2: 15. 1886.

Phyllosticta variegata, E. & E., Journ. Mycol. 5: 145. 1889.

Exsicc. Ell. N. A. F. 1163, 2681, Sydow. M. March. 1078.

On *Fraxinus viridis*, Kansas (Bartholomew) sporules smoky-hyaline, 3-4 x 2.5-3 μ , on *Fraxinus*, Michigan (Spalding) 4-5 x 2.5-3 μ , on *Fraxinus*, Pennsylvania (Martin) 5-7 x 2.5-3 μ , on *Fraxinus Americana*, Mississippi (Tracy) 5-6 x 1.5-2 μ , on *Fraxinus*, Pennsylvania (Rau) 6-7 x 2.5-3 μ .

Spots light brown, .5-1 cm. diam., with a narrow, dark purplish border. Perithecia epiphyllous, scattered, black, lenticular, 130-150 μ diam. Sporules oblong or oblong-elliptical.

5. *Phyllosticta Garryae*, Cke. & Hark.

Grev. 9: 84. 1881. Journ. Mycol. 2: 15. 1866.
Sacc. Syll. 3: 24. 1884.

On *Garrya elliptica*, California (Harkness.)

Epiphyllous, spots elliptical, light grey, border purple. Perithecia black, shining, slightly prominent. Sporules narrow-elliptic, hyaline, continuous, 10-12 x 2-2.5 μ .

6. *Phyllosticta micropuncta*, Cke.

Ann. N. Y. Acad. Sci. 1: 181. 1878.
P. *Persea* E. & M. Journ. Mycol. 1: 100. 1885, id. 2: 17. 1876.

On leaves of *Persea Carolinensis*, Florida (Martin) Louisiana (Langlois).

Epiphyllous. Spots subcircular, grayish-brown, .5-1 cm. diam. with a narrow, dark border. Perithecia minute (150-300 μ), brownish-black, erumpent. Sporules oblong or ovate-oblong, nucleate, (3 μ long Cke.), (3-8 x 1-3 μ , Martin.)

7. *Phyllosticta Magnoliae*, Sacc.

Mich. 1: 139. 1877.
Exsicc. Briosi & Cavarr. F. Par. No. 19.

On leaves of *Magnolia grandiflora*, Louisiana (Langlois), Florida (Martin & Underwood).

Spots subcircular and dirty white, .5-2.5 cm. diam., with a narrow, dark margin, finally often confluent and of irregular shape, 2-6 cm. across, occupying a large part of the leaf. Perithecia epiphyllous, evenly scattered, depressed-hemispherical, 300-400 μ diam., the perforated apex raising and splitting the epidermis. Sporules narrow-elliptical 6-8 x 1.5-2 μ (6-10 x 2-4 μ Briosi & Cavarr.), 2-nucleate.

Saccardo says spots "immarginate;" but the spec. in Briosi & Cavarra's Fung. Parass. have the same narrow, dark margin as ours and are evidently the same as ours.

8. *Phyllosticta glauca*, Cke.*Septoria glauca* Cke. in Rav. F. Am. No. 93.On leaves of *Magnolia glauca* So. Ca. (Ravenel).

Spots pallid, nearly round, 3-4 mm. diam., border dark brown, slightly raised. Perithecia punctiform, black, epiphyllous, erumpent, 65-80 μ diam. Sporules oblong, hyaline, 4 x 1 μ .

The above description by Dr. Martin, from spec. in Rav. F. Am. makes this differ from *Phyllosticta Magnoliae* Sacc. in the character of the spots and smaller spores, but it is not improbable that it is only a form of the last mentioned species.

9. *Phyllosticta Cookei*, Sacc.*P. Magnoliae* Cke. Grev. 9: 94. 1881.On leaves of *Magnolia acuminata*, West Va. (Nuttall!).

Epiphyllous. Spots variable in form, becoming whitish, not marginate. Perithecia punctiform, lens-shaped. Sporules oblong-ovoid, unequal, 8-12x2-4.5 μ .

Differs from *P. Magnoliae* Sacc. in its much larger sporules. In Mr. Nuttall's spec. they are 12-20 x 6-7.5 μ .

10. *Phyllosticta Coccolobae*, E. & E.

Ninth Annual Rep. Mo. Bot. Garden, 118. 1898.

On leaves of *Coccoloba uvifera* (L.) Jacq. Nassau, Bahama Islds. Nov. 1890, (Prof. A. S. Hitchcock.)

Spots amphigenous, circular, 3-5 mm. diam. purplish-red with a slightly raised, darker-colored border, outside of which is a narrow zone bordered by an appressed, coarse, light colored fringe of hyphae. Perithecia innate, mostly hypophyllous, minute, invisible without a lens. Sporules narrow-elliptical or subfusoid, hyaline, 4-5 x 2 μ .

11. *Phyllosticta Dircae*, E. & D.

Can. Rec. Sci. 267. 1893.

On leaves of *Dirca palustris*, Canada, (Dearness.)

Spots subcircular, .5-1 cm. diam. sometimes confluent, subzonate, margin narrow and nearly black, the center becoming cinereous and soon falling out. Perithecia numerous, reddish, scattered over the entire spot, epiphyllous but visible below, only the apex erumpent, 60-100 μ diam. Sporules oblong-elliptical, hyaline, binucleate, 5-8 x 2.5-3 μ . Probably the spermogonial stage of *Sphaerella Dircae*, E. & E.

12. *Phyllosticta ivaecola*, E. & E.

J. Mycol. 2: 37. 1886.

On leaves of *Iva frutescens*, Louisiana (Langlois).

Spots amphigenous, small (1-2 mm.), whitening out, with a raised, narrow, brown border. Perithecia epiphyllous, punctiform (75-90 μ), lenticular, black. Sporules ovate, or oblong-elliptical, 4-5 x 1.5 μ .

13. *Phyllosticta arbutifolia*, E. & M.

J. M. 2: 129. 1886.

On living leaves of *Pyrus arbutifolia*, Newfield, N. J., Sept. 5th, 1885.

Spots epiphyllous, small (1 millim. or less), white, scarcely showing at all on the under side of the leaf. Perithecia mostly a single one in the center of the spot, subastomous, emergent, black, 70-80 μ in diam. Sporules subglobose, hyaline, 6-8 μ in the longest diam.

14. *Phyllosticta saccharina*, E. & M.

J. M. 2: 130. 1886.

On living leaves of *Acer saccharinum*, Missouri (Galloway.)

Spots amphigenous, definite, small (1-2 millim.), white, with a rusty brown border, scattered irregularly. Perithecia epiphyllous, but visible also below, lenticular, black, 100-120 μ in diam. Sporules oblong, 3.5-4.5 x 1-1.25 μ , hyaline. *Phyllosticta Pseudoplatani*, Sacc., as shown in *de Thuemen's Mycotheca*, No. 1789, has similar spots, but they are clustered on large, reddish-brown spots. The specimens in our copy are sterile, but the larger sporules (5-6 x 3 μ) would separate it.

15. *Phyllosticta adusta*, E. & M.

J. M. 2: 130. 1886.

On orange leaves partly killed by frost, Florida, (Martin).

Spots amphigenous, pallid or grayish, with a definite, narrow, yellowish-brown border, mostly marginal, 1-4 cm. across or extending along the entire margin of the leaf. Perithecia amphigenous, black, subglobose, closely aggregated, sometimes confluent, covered by the cuticle, which is soon torn, 175-240 μ in diam. Sporules hyaline, oblong or subcylindrical, mostly with two or three nuclei, 10-16 x 4-7 μ . Basidia 7-10 μ long. Differs from *P. marginalis*, Penz., in its larger sporules.

16. *Phyllosticta Cyrillae*, E. & M.

J. M. 2: 130. 1888.

On leaves of *Cyrilla racemiflora*, Green Cove Springs, Florida, Feb. 2d, 1886. (Dr. Martin.)

Spots large, covering the ends and edges of the leaves, red-brown at first, changing to grey-brown with age. Perithecia black, subglobose, astomatous, deeply immersed, then erumpent, mostly epiphyllous, aggregated, 110-140 μ . Sporules hyaline, ovoid, granular, 8-10 x 5-7 μ .

17. *Phyllosticta fagicola*, Ell. & Morgan.

J. M. 4: 10. 1888.

On leaves of *Fagus ferruginea*, Ohio (Morgan.)

Spots amphigenous, orbicular, one cm. in diameter, dull white, with a narrow (one millim.) red border. Perithecia black, scattered, prominent, mostly epiphyllous. Sporules narrow-elliptical, with a pale yellowish tint, $10-13 \times 3-4 \mu$. The best developed perithecia were on the nerves of the leaf and hypophyllous.

Phyllosticta faginea, Pk. In 40th Rep. is the same as this. That report was not given to the public till May, 1888, while *P. fagicola*, E. & M. was published January, 1888.

18. *Phyllosticta hibiscina*, E. & E.

J. M. 4: 9. 1888.

On living leaves of *Hibiscus mutabilis*, Louisiana (Langlois.)

Spots amphigenous, gray, irregular, large (.5-1.5 cm.) deciduous. Perithecia rather large, black, lenticular, prominent on both sides of the leaf. Sporules oblong-elliptical, hyaline, two-nucleate, $6-8 \times 1.5-2 \mu$. Differs from *P. Syriaca*, Sacc., in its narrower sporules and larger, deciduous spots.

19. *Phyllosticta Meliae*, E. & E.

J. M. 4: 9. 1888.

On dead, bleached margins of living leaves of *Melia Azedarach*, Louisiana (Langlois.)

Perithecia amphigenous, lenticular, erumpent, 150μ in diameter. Sporules oblong-fusoid, two-nucleate, hyaline, $5-8 \times 1.5 \mu$. The whitened tips and margins of the leaves are separated from the green, living part by a narrow, dark-reddish line. *P. Azedarachis*, Thum., is said to have globose perithecia and sporules $5 \times 3 \mu$, without nuclei.

20. *Phyllosticta Linderae*, E. & E.

J. M. 4: 9. 1888, E. & E. N. A. F. 2154.

On living leaves of *Lindera Benzoin*, Delaware, (Commons.)

Spots large, round, one cm. across, dark brown, with a reddish yellow border. Perithecia hypophyllous, 65-75 μ in diameter, with a rather large, round opening above, erumpent. Sporules oblong-cylindrical, 3-4 x .5 μ , hyaline. The spots have a burnt or scorched look, quite dark above, paler below.

21. *Phyllosticta lindericola*, E. & E.

Proc. Phil. Acad. 354. 1894.

Exsicc. E. & E. N. A. F. 3251.

On leaves of *Lindera Benzoin*, West Va. (L. W. Nuttall.)

Spots various, punctiform and minute without any definite border or irregular in shape, (1-15 mm. in diameter,) or marginal, forming a narrow strip along the edge of the leaf for half its length, pale brown, nearly the color of weather-beaten wood, with a dark (almost black) border. Perithecia epiphyllous hemispherical, 100-120 μ diam., covered by the blackened epidermis which is raised into pustules barely pierced at the apex. Sporules oblong-elliptical, hyaline, 4-7 x 2-3 μ . This differs in almost every respect from *Ph. Linderae*, E. & E.

22. *Phyllosticta Symphoricarpi*, West.

Kekx. Fl. Flandr. 1: 419. 1867.

On leaves of *Symphoricarpus occidentalis*, N. Y. State (Peck.)

Spots epiphyllous, various, dark-fuliginous, becoming cinereous in the center. Perithecia punctiform lenticular. Sporules oblong, 6-7 x 2.5 μ , rounded at each end, hyaline.

23. *Phyllosticta concentrica*, Sacc.

Fungi Veneti Series V. 203. var. *Sparsa*, E. & E. in Ell. & Evrht. N. A. F. 2936.

On fallen leaves of *Hedera Helix*, Vineland, N. J.

Perithecia innate, scattered over large areas of the leaf, visible on both sides but more distinctly so below. Sporules subglobose 6-7 μ , ovate or elliptical, 6-7 x 5-6 μ . There are no definite spots as in the typical form.

24. *Phyllosticta Rhododendri*, West.

Bull. Acad. Brux. I, p. 399.

Phyllosticta maxima, E. & E. Journ. Mycol. 4: 128. 1888.

Exsicc. Ell. & Evrht. N. A. F. 2765.

On leaves of *Rhododendron Catawbiense*, Cult., Newfield, N. J.

Spots dark, rusty brown, zonate, mostly marginal or terminal and then occupying a large part of the upper half of the leaf. Perithecia not abundant, innate, small (120-150 μ), subprominent, pierced above. Sporules narrow-elliptical, often a little narrower at one end, 10-20 x 6-7 μ with 2-3 faint nuclei.

This description is from the Newfield spec. The shorter sporules are ovoid.

25. *Phyllosticta Ulmi*, West.

Bull. Acad. Belg. II, Ser. XII, Vol. 7.

Spots amphigenous, subcircular, scattered and confluent, becoming cinereous, immarginate, often sterile. Perithecia rare, very small, scattered, perforated. Sporules ovoid, 1-2 guttulate, hyaline, 10 x 5 μ .

Spec. on leaves of *Ulmus pubescens*, West Va. (Nuttall) are doubtfully referred to this species spor. 16 x 7.5 μ .

26. *Phyllosticta confertissima*, E. & E.

Proc. Phil. Acad. 455. 1893.

On leaves of *Ulmus fulva*, Kansas (Bartholomew.)

Spots amphigenous, circular, 4-6 mm. diam., definite, of a uniform dark brick-red color. Perithecia hypophyllous, numerous, minute, 75 μ diam., perforated above, scarcely visible without a lens. Sporules allantoid, hyaline, 3-4 x 1 μ .

Has the same habit as *Phyllosticta* (*Phoma*) *Virginiana* Ell. and Halst.

27. *Phyllosticta moricola*, E. & E.

Proc. Phil. Acad. 455. 1893

On leaves of young seedlings of *Morus rubra*, Kansas (Bartholomew.)

Spots amphigenous, large, red-brown at first, then whitening out with a brick-red, shaded margin, irregular in shape, 1-2 cm. diam. Perithecia amphigenous, subdiscoid, brown, perforated above, 100-110 μ diam. Sporules oblong or clavate-oblong or subelliptical, hyaline, 2-nucleate, 5-8 x 2.5-3 μ .

Ph. morifolia Pass. is on discoid spots and has sporules only 3.5 x 1.5 μ .

28. *Phyllosticta amicta*, E. & E.

Proc. Phil. Acad. 430. 1895.

On leaves of *Arctostaphylos viscida* and *A. Manzanita*, Jackson, Amador County, Calif. (Geo. Hansen.)

Spots cinereous, with a narrow, reddish-purple border, circular 3-4 mm. diam. Perithecia amphigenous, erumpent, depressed-globose, 120-200 μ diam., overrun with a hyphomycetous growth, *Alternaria*, which also spreads more or less over the surface of the leaf. Sporules ovate or elliptical, 7-10 x 5-6 μ , light straw-yellow.

On *A. Manzanita* the perithecia are scattered over reddish-brown dead parts of the leaf, mostly the upper half, without any definite spots. The *Alternaria* has conidia composed of globose, brown cells 7-8 μ diam., joined in toruloid threads, or collected in irregular shaped masses, or forming concatenate conidia 10-30 x 8-20 μ .

29. *Phyllosticta fimbriata*, E. & E.

Bull. Torr. Bot. Club 286. 1897.

On leaves of *Arbutus Menziesii*, Oregon, (Davis.)

Spots amphigenous, rusty brown below, cinereous, purple-margined and slightly raised above, irregular in shape, 2-6 mm. diam. Perithecia epiphyllous, not abundant, gray, 200-300 μ diam., hemispheric-prominent, fringed around the base with straight spreading simple closely septate hyphae 50-75 x 5 μ . Sporules variable in shape, oblong, 3-5 x 1.5, elliptical, 4-6 x 2-3 μ , or globose, 5-6 μ .

30. *Phyllosticta Vaccinii*, Earle.

Bull. Torr. Bot. Club. 31. 1897.

On living leaves of *Vaccinium arboreum*, Auburn, Ala. (Underwood & Earle.)

Epiphyllous, on brown, irregular, indeterminate spots 1 cm. or more in diameter, perithecia scattered, erumpent, of soft texture, ostiole large (8-10 μ), size variable, 80-120 μ . Spores large, usually ovate, with a large (4 μ) spherical gutta near the broader end, about 12 x 6 μ .

31. *Phyllosticta minutissima*, E. & E.

Proc. Phil. Acad. 76. 1891.

Exsicc. Ell. & Evrht. N. A. F. 1244.

On living leaves of *Acer glabrum*, Nebraska (Webber.)

Spots amphigenous irregular in outline, subcir-

cular, 4-9 mm. diam. reddish-brown above with a lighter colored shaded border, paler below. Peritheci, hypophyllous, minute ($75-85\ \mu$), globose, numerous subprominent, filled with minute, subelliptical, hyaline sporules about $1.5-2\ \mu$ long and $.5\ \mu$ or less broad.

32. *Phyllosticta Staphyleae*, Dearness.

Proc. Phil. Acad. 77. 1891.

On living capsules of *Staphylea trifolia*, London, Canada, (Dearness.)

Spots at first wine color, becoming brown, mostly limited when young by a carmine-red line. Perithecia scattered, $90-145\ \mu$ diam., innate, concolorous with the spot at first, at length darker and finally well marked by a ring of raised, light cuticular cells. Sporules oblong-elliptical, hyaline, becoming pale brown, $6-7\ \times\ 2.75-3.5\ \mu$.

33. *Phyllosticta Parkinsoniae*, E. & E.

Proc. Phil. Acad. 357. 1874.

On living leaves of *Parkinsonia aculeata*, San Antonio, Texas, (Dr. B. F. G. Egeling).

Spots amphigenous, circular, minute (1 mm.) nearly black, with a slightly raised border, becoming reddish brown. Perithecia innate, only slightly prominent, depressed-globose, dark, $80-100\ \mu$ diam. Sporules elliptical or oblong-elliptical hyaline, $4-6\ \times\ 2\ \mu$.

34. *Phyllosticta Castaneae*, E. & E.

Proc. Phil. Acad. 357. 1894.

Exsicc. Ell. & Evrht. N. A. F. 3254.

On leaves of *Castanea vesca*, West Va. (Nuttall).

Spots circular, rust color, with a narrow, dark-shaded margin. Perithecia epiphyllous, scattered on the spots, dark, semierumpent, $100\ \mu$ diam., often collapsing. Sporules oblong, hyaline, $5-7\ \times\ 2-2.5\ \mu$.

35. *Phyllosticta castanicola* E. & E.

Proc. Phil. Acad. 431. 1895.

On leaves of *Castanea chrysophylla*, California (Howe).

Spots epiphyllous, dark-brown, subcircular, 2-5 mm. diam., with a narrow, dark, subfimbriate border, scarcely visible on the lower face of the leaf. Perithecia crowded on the spots, buried in the substance of the leaf, hard and tough, orbicular or elliptical, 80-100 μ diam., sometimes 2-3 confluent, the apex erumpent and broadly perforated. Sporules abundant, minute, oblong, 3-3.5 x 1.25-1.5 μ , hyaline. The tough, almost sclerotoid perithecia indicate that this may be the stylosporous stage of some *Phyllachora*, or other dothideaceous fungus. Very different from *Ph. Castaneae* E. & E.

36. *Phyllosticta spermoides*, Pk.

40th Rep. N. Y. State Mus. 58. 1888.

P. turmalis E. & E. Erythea 23. 1888.

On leaves of *Vitis riparia* Ganesvoort, N. Y. (Peck), same host Rockport, Kansas (Bartholomew.)

Spots circular or subangular, brown or cinereous with a brown border, 2-4 mm. diam. Perithecia hypophyllous, numerous, blackish, minute (60-70 μ) ("35-62 μ " Pk.) Sporules oblong-cylindrical, a little thicker at the ends 3.5-4.5 x 1 μ .

37. *Phyllosticta kalmicola*, Schw.

Proc. Phil. Acad. 454. 1893.

Depazea kalmicola, Schw. Syn. N. Am., No. 1812, (p. p.)

Ell. & Evrht. N. A. F. 2935.

On living leaves of *Kalmia latifolia*, Newfield, N. J.

Spots amphigenous, circular, 1-2 mm. diam., white with a dark purple margin shading off into reddish purple. The white is less conspicuous below. Perithecia epiphyllous, depressed globose, subcuticular, black, 100-200 μ diam., sometimes concentrically

arranged on the spots, semi-erumpent, but closely covered by the transparent cuticle which is often stellately cleft, but not reflexed, rather broadly pierced above. Sporules oblong-elliptical, hyaline, minute ($2-3 \times 1 \mu$).

The *Depazea kalmicola* Schw., embraces both a *Septoria* and a *Phyllosticta*, not outwardly distinguishable, the former issued in de Thumen's Mycotheca, No. 1494, Ell. N. A. F. 344, Roum. F. G. 2327 and Rab. F. E. 2792.

38. *Phyllosticta latifolia*, E. & E.

Proc. Phil. Acad. 454. 1893.

Ell. & Evrht. N. A. F. 2938

On leaves of *Kalmia latifolia*, Newfield, N. J.

Spots amphigenous, circular, 3-5 mm. diam., rusty brown with a shaded dark red border, indistinctly zonate. Perithecia buried, 150-200 μ diam., the apex rupturing the epidermis but hardly erumpent, circinate arranged so as to leave an empty space in the center of the spot. Sporules acutely and narrowly elliptical, hyaline, 6-8 \times 2.5-3.5 μ on basidia about as long as the sporules.

Differs from *Ph. kalmicola* (Schw.) in its brown, subzonate spots, circinate perithecia and larger sporules.

39. *Phyllosticta discincola*, E. & E.

Proc. Phil. Acad. 454. 1893.

On leaves of *Forsythia* Cult., Washington, D. C. (Fairchild.)

Spots amphigenous, grayish brown, 1-3 mm. diam., subcircular, bounded on both sides by a distinct raised line giving the appearance of a round disk on the face of the leaf. The line is more pronounced and the spots are rather paler below. Perithecia amphigenous, black, 100-110 μ diam. pierced above,

only the apex erumpent. Sporules elliptical, olivaceous, $4.5 \times 2.5-3 \mu$.

Distinguished from *Ph. Forsythiae* Sacc. by its discoid, smaller spots. It also grows on a different species of *Forsythia*.

On the same leaves there is an *Ascochyta* with sporules $7-10 \times 2.5 \mu$ and also *Discosia maculicola* Ger.

40. *Phyllosticta destruens*, Desm.

Ann. Sci. Nat. 31. 1847.

Phoma Virginiana, Ell. & Halst. Journ. Mycol. 4: 8. 1888.

Exsicc. Ell. & Evrht. N. A. F. 2830.

On leaves of *Prunus Virginiana*, Iowa (Halsted), and on *Prunus demissa*, Kansas (Bartholomew).

Spots amphigenous, large (.5-1 cm.), round, subindefinite, rusty brown above, darker below. Perithecia hypophyllous, minute, abundant, erumpent-superficial. Sporules oblong-cylindrical, $2-7 \times 1.5 \mu$.

41. *Phyllosticta Laurocerasi*, S. & S.

Mich. 1: 153. 1877. Sacc. Syll. 3: 4. 1884.

Exsicc. Ell. & Evrht. N. A. F. 3055. Ell. & Evrht. F. Col. 275.

On leaves of *Prunus laurocerasus*, Berkeley, Calif. (Blasdale).

Perithecia about .25 mm. diam., semi-emergent, epiphyllous, scattered on faded areas of the leaf. Sporules oblong-cylindrical, hyaline, $6-8 \times 1.5-2 \mu$, ($5-10 \times 3-4 \mu$ Sacc.) This is not the typical form, but may, we think, be referred to this species.

In the N. A. F. Spec. there are the remains of some (old *Pyrenomyce*)? on the under side of the leaf.

42. *Phyllosticta serotina*, Cke.

Grev. 12: 26. 1883.

Exsicc. Rav. F. Am. 513.

On leaves of *Prunus serotina*, South Carolina (Ravenel), New Jersey (Ellis), Kansas (Kellerman).

Spots rusty brown, circular, border darker, narrow obscure. Perithecia dark brown, epiphyllous, scattered punctiform, $150\ \mu$ in diameter. Sporules hyaline, elliptic-lanceolate, $12 \times 3.5-5\ \mu$.

In our copy of F. Am. there are two leaves, one of them agreeing with above description except the wider sporules, and the other having larger spots and sporules smoky-hyaline, $5-6 \times 3\ \mu$; the later is evidently *P. prunicola* Sacc.

43. *Phyllosticta Sanguinea*, Desm.

Desm. Ann. Sci. Nat.

Exsicc. Desm. Pl. Crypt. 1st Ed. No. 1858.

On leaves of *Prunus* sp.

Spots and perithecia not distinguishable from those of *P. serotina* Cke. but the ovate-elliptical sporules are smaller $5-6 \times 2.5-3\ \mu$ and somewhat flattened or compressed, so that when viewed edgewise they are only about $1.5\ \mu$ thick; they are however hyaline, as in Cooke's species. The measurements given above are from the spec. in Desm. Pl. Crypt. There is in our herbarium a spec. on *Prunus* from Woods Holl, Mass. (collector's name not given) which agrees throughout with Desmazieres' spec.

44. *Phyllosticta circumscissa* Cke.

Grev. 11: 150. 1883.

Exsicc. Ell. & Evrht. N. A. F. 3553. Ell. & Evrht. F. Col. 841.

Amphigenous; spots circular, rusty brown, at length deciduous. Perithecia few, innate, minute. Sporules oblong-elliptical, $8 \times 2\ \mu$.

Specimens sent from California by Mr. N. B. Pierce seem to be this species but are entirely sterile.

45. *Phyllosticta prunicola*, Sacc.

Mich. 1: 157. 1878.

Exsicc. Rav. F. Am. (partly). Briosi & Cavarra Fung. Par. No. 141, Sydow. M. March. 2268, 2694, 4193.

On *Prunus demissa*, Kansas (Bartholomew), on *Prunus serotina*, Canada (Dearness), Wisconsin (Davis) South Carolina (Ravenel).

Spots circular, small, 1-3 mm. mostly grayish-white with a narrow, darker border, deciduous. Perithecia epiphyllous, punctiform (100-110 μ), hemispherical, pierced above, not abundant. Sporules oblong or ovate-elliptical, obtusely rounded at the ends, brownish or smoky-hyaline, with a single oblong nucleus in the center, 5-5.5 x 2.5-3 μ .

Differs from *P. sanguinea* Desm. in its grayish-white spots, and obtuse, brownish or smoky-hyaline sporules.

46. *Phyllosticta clethricola*, E. & M.

Am. Nat. 1002. 1882.

Exsicc. Ell. & Evrht. N. A. F. 1153. Ell. & Evrht. F. Col. 1246.

On leaves of *Clethra alnifolia*, New Jersey (Ellis).

Spots circular, rusty brown, 2-10 mm. diam., with a narrow, slightly raised, deeper colored border. Perithecia amphigenous but mostly epiphyllous, suberumpent, punctiform. Sporules subhyaline, ovate, guttulate, 9 x 6 μ .

47. *Phyllosticta Tiliae*, Sacc. & Speg.

Michelia 1: 158. 1880.

On leaves of *Tilia Americana*, Lake City, Fla., June, 1900 (Lucia McCulloch). Com. H. H. Hume, No. 74.

Spots circular, reddish-brown with a narrow, darker border, whitening out, 2-3 mm. diam. Perithecia scattered, lenticular, 120 μ diam., perforated above, texture parenchymatic, olivaceous. Sporules ellipsoid, obtuse at the ends, 5-6 x 3, subolivaceous.

48. *Phyllosticta Quercus-Prini*, E. & E.

Proc. Phil. Acad. 356. 1894.

On leaves of *Quercus Prinus*, West Va. (Nuttall).

Spots circular, rusty brown, definite, with a very narrow border, 2-3 mm. diam. Perithecia epiphyllous, scattered, erumpent, 90-110 μ diam. Sporules ovate or oblong, hyaline, mostly a little curved, 5-6.5 x 2-2.5 μ .

This comes very near *Ph. Ludoviciana* E. & E. (Journ. Mycol. II, p. 130), but in that species the spots are larger, perithecia more prominent below, and sporules rather larger. *Ph. marginalis* E. & E. also has similar sporules but the perithecia are hypophyllous.

49. *Phyllosticta livida*, E. & E.

Bull. Torr. Bot. Club. 24: 285. 1897.

On leaves of *Quercus Douglasii*, Amador Co., Calif. (Hansen), on leaves of *Quercus aquatica*, Florida (Hume).

Spots large (1 cm.), subindefinite, brown below, livid brown above. Perithecia amphigenous, numerous, covered by the livid epidermis which is raised into small pustules and only rarely ruptured. Sporules minute (3 x 1), numerous, hyaline.

50. *Phyllosticta Wislizeni*, E. & E.

Bull. Torr. Bot. Club. 24: 286. 1897.

On leaves of *Quercus Wislizeni*, Calif. (Hansen).

Epiphyllous, on dirty brown subindefinite spots or dead areas of the leaf, often terminal or lateral, and subconfluent. Perithecia at first covered by the blackened pustuliform-elevated epidermis, which is at length variously ruptured, often by a fissure running across the pustule, with the aspect of *Hysterium*, 250-300 μ diam., globose or oblong. Sporules oblong-elliptical, hyaline, 10-12 x 5-6 μ , sometimes a little bulging on one side.

51. *Phyllosticta Quercus rubrae*, W. R. Gerard.

Bull. Torr. Bot. Club. 6: 78. 1876.

On leaves of *Quercus rubra*, New York (Gerard).

Spots few, subcircular, or irregular, white, border red. Perithecia epiphyllous, numerous, minute, globose, black, collected in the center of the spots. Sporules very small, ovoid.

52. *Phyllosticta apiculata*, Sacc. & Syd.

Sacc. Syll. 14: 865. 1889.

Phyllosticta marginalis, E. & E. Journ. Mycol. 5: 9. 1889.

On leaves of *Quercus aquatica*, La. (Langlois).

Occupying the dead, light rusty brown tips and margins of the leaves, the dead parts not very definitely limited and mostly bordered by a dull, purplish discoloration. Perithecia hypophyllous, scattered, about 150 μ in diameter, partly prominent, covered by the epidermis, blackish. Sporules oblong-elliptical, hyaline, 6-7 x 2.5-3 μ , on cylindrical basidia, about 12-1.5 μ . The habit is similar to that of *P. terminalis* and *P. Leucothoes*, E. & M. Differs from *P. Quercus*, Sacc. and *P. quercea*, Thum., according to the specimens and the description of those species.

53. *Phyllosticta Ludoviciana*, E. & M.

Journ. Mycol. 2: 130. 1886.

On living leaves of *Quercus aquatica*, Louisiana, (Langlois).

Perithecia amphigenous, but more prominent below, brown, flattened, erumpent, 150 μ in diam., scattered over large, red-brown areas of the leaf (mostly lateral) or on more definite oval or subangular spots, with a darker, slightly raised border. Sporules oval, hyaline, 5-8 x 2-3 μ .

54. *Phyllosticta virens*, E. & E.

Journ. Mycol. 6: 36. 1890.

On living leaves of *Quercus virens*, Louisiana, (Langlois.)

Spots amphigenous, 1 centimeter in diameter, pale grayish-brown, subirregular, definitely limited by a slightly darker line. Perithecia slightly erumpent, small 72-100 μ . Sporules oblong-elliptical or subovate elliptical or subfusoid, hyaline, 4-7 x 1.5-2.5 μ . Differs from the other species on oak leaves in the character of the spots and size of the sporules.

55. *Phyllosticta Quercus ilicis*, Sacc.

Sacc. Syll. 3: 35. 1884.

On leaves of *Quercus virens*, Ocean Springs, Mississippi (Tracy.)

Spots epiphyllous, subrotund-sinuous, whitening out in drying, surrounded by a dark-reddish line. Perithecia gregarious, punctiform, lenticular, covered by the epidermis. Sporules ellipsoid-oblong, 5x4 μ , yellowish.

56. *Phyllosticta phomiformis*, Sacc.

P. phomiformis, Sacc. Mich. 2: 573. 1882.

Journ. Mycol. 2: 17. 1886, Sacc. Syll. 3: 35. 1884.

Exsicc. Ell. & Evrht. N. A. F. 1160. Ell. & Evrht. F. Col. 274. Seym. & Earle, Econ. Fungi 181.

On leaves of *Quercus alba*, common.

Spots pallid, 3-5 mm., border brown, slightly elevated. Perithecia loosely clustered, globose-lenticular, erumpent, amphigenous, black, 130-150 μ . Sporules oblong, ends acutish, granular, hyaline, 20-22 x 8-10 μ ; basidia short, attenuated upwards.

57. *Phyllosticta agrifolia*, E. & E.

Erythea. 145. 1893.

On leaves of *Quercus agrifolia*, Calif. (Blasdale).

Spots terminal or marginal, rusty brown, with a narrow, reddish border, sometimes none, the entire leaf being dead and dry. Perithecia amphigenous, subglobose, perforated above, 150 to 200 μ diam., semierumpent but loosely covered by the upraised edges of the ruptured and whitened epidermis. Sporules oblong, hyaline, continuous, 7-8 x 2.5-3 μ .

Closely allied to *Ph. Quercus* Saccardo, but in that species (sec. spec. in Rab. F. Eur. 2896) the spots are circular and paler, with a narrow raised margin, and the perithecia slightly prominent are closely covered by the epidermis which is not ruptured. The sporules are about the same in both. The California specimens are accompanied by *Pestalozzia monochaeta*, Desm. on the same leaves.

58. *Phyllosticta vesicatoria*, Thum.

Sacc. Sylloge 3. 34.

On leaves of *Quercus cinerea*, South Carolina (Ravenel.)

Spots large, dry, vesicular, brown, border purple. Perithecia epiphyllous, scattered, globose, semi-immersed, medium size, black, ostiolate. Sporules minute ellipsoid-cylindrical, ends round, straight, hyaline, 2.5 x 1.5 μ .

59. *Phyllosticta tumoricola*, Pk.

40th Rep. N. Y. State Mus. 57. 1888.

On living gall-spotted leaves of *Quercus alba*, N. Y. State (Peck.)

Spots subcircular, arid, pallid with a reddish or reddish-brown margin, apparently caused by insects. Perithecia amphigenous or epiphyllous, minute, 125-175 μ diam., depressed, brownish. Sporules oblong or

narrowly elliptical, hyaline, 2-4 nucleate, 10-12 x 3 μ .

60. *Phyllosticta Chionanthi*, Thum.

Sacc. Syll. 3: 29. 1884.

Exsicc. Thum. M. U. 1489.

On leaves of *Chionanthus Virginica*, West Va. (Nuttall).

Perithecia epiphyllous, scattered, at first for a long time covered, finally perforated and hemispheric emergent, black, in the middle of an irregular spot which in drying becomes pale-white with a reddish-brown, narrow margin. Sporules ellipsoid, rounded at the ends, hyaline, 3.5-5.5 x 2-2.5 μ . The West Va. specc. agree well with this description.

61. *Phyllosticta Xanthorrhizae*, Nuttall.

Millsbaugh & Nuttall, Flor. West Va. 105. 1896.

On leaves of *X. apiifolia*, Nov. 1893.

Spots elliptical, dirty-white in the center with a dark shaded margin, 3-10 x 2-8 mm., finally more or less deciduous. Perithecia seated on the white part of the spots, epiphyllous, subdiscoid, perforated above, 60-75 μ diam. Sporules oblong-elliptical, hyaline, 2-nucleate, 5-6 x 2.5-3 μ .

62. *Phyllosticta cercidicola*, E. & E.

Flora. West Va., 105. 1896.

Exsicc. Ell. & Evrht. N. A. F. 3253.

On leaves of *Cercis Canadensis*, West Virginia (Nuttall.)

Spots circular, .5-1 cm. diam., rusty-brown, becoming lighter, paler below, margin narrow, reddish-purple. Perithecia epiphyllous, convex, erumpent, but covered (except the apex) by the epidermis, 110-150 μ diam. Sporules oblong, slightly narrowed and rounded or obtusely pointed at the ends, hyaline, 2-3-nucleate, 15-20 x 6-7 μ .

63. *Phyllosticta Celastri*, E. & E.

Millsbaugh & Nuttall Fl. West Va. 104. 1896.

On leaves of *Celastrus scandens*, Oct. 1894.

Spots mostly marginal, 8.5-1cm. diam., definite, ferruginous, with a narrow, darker border. Perithecia epiphyllous, subapplanate, 150 μ diam. Sporules oblong, 7-10 x 2-2.5 μ , hyaline, 2 nucleate.

64. *Phyllosticta Oxydendri*, E. & E.

Fl. West Va. 104. 1896.

On leaves of *Oxydendron arboreum*, Oct. 1894.

Spots subcircular or elliptical, reddish-gray, 3-8 mm. diam., with a narrow, slightly raised, dark-red border beyond which the leaf is generally shaded reddish-purple. Perithecia epiphyllous, subapplanate, 100-120 μ diam. Sporules oblong-elliptical, 2-nucleate, hyaline, 7-8 x 2.5-3 μ . The spots finally become of a lighter, dirty-white color.

65. *Phyllosticta Roberti*, Boy. & Jacz.

Mat. Mycol. Montpell. p. 39.

On leaves of *Ficus elastica*, Hobe Sound, Fla. (H. H. Hume.)

Spots large, 2-5 cm. or more, indistinct, subzonate, lighter colored than the surrounding parts of the leaf. Perithecia evenly scattered over the spots and also over the other parts of the leaf, amphigenous but mostly epiphyllous, innate, only the apex erumpent, about 200 μ diam. Sporules cylindrical, 12-20 x 4-5 μ .

66. *Phyllosticta Gordoniae*, E. & M.

Journ. Mycol. 1: 100. 1885, id. 2: 15. 1886.

Sacc. Syll. Add. 1-2, 289, 1886.

On leaves of *Gordonia lasianthus*, Florida (Martin).

Spots dark brown, dry, occupying the ends and

sides of the leaves. Perithecia brown-black, subglobose, slightly erumpent, amphigenous, $120-140\ \mu$ in diameter. Sporules hyaline, oblong, nucleate, $12 \times 3\ \mu$.

67. *Phyllosticta canescens*, E. & E.

Bull. Torr. Bot. Club. 54: 1900.

On leaves of *Ribes divaricatum*, Idaho (Henderson).

Spots large, irregular, occupying and killing half of the leaf, or lobe of a leaf, rusty brown, whitening out and becoming minutely furfuraceous above, the surrounding parts of the leaf becoming yellowish. Perithecia epiphyllous, prominent, small $80-100\ \mu$. Sporules oblong or ovate-elliptical, mostly with a nucleus in each end, $5-8 \times 2.5-3.5\ \mu$.

68. *Phyllosticta Grossulariae*, Sacc.

Mieh. 1: 136. 1878.

Journ. Mycol. 2: 15. 1886.

Exsicc. Ell. & Evrht. N. A. F. 2764. Thum. Mycoth. Univ. 1491. Sydow. M. March. 4964.

Spots circular or irregular, reddish-brown, becoming gray 2-8 mm. diam., often obscurely zonate, margin generally a little darker. Perithecia punctiform, scattered, epiphyllous. Sporules ovoid or ellipsoid, $5-7 \times 1.5-3\ \mu$.

On *Ribes rotundifolia*, Mississippi (Tracy), $5-6 \times 2-2.5\ \mu$; on *Ribes floridum*, Canada (Dearness), $6-8 \times 2\ \mu$, and spots small 1-2 mm; on same host, Wisconsin (Davis), $5-6 \times 3\ \mu$; on *Ribes oryacanthoides*, Kansas (Bartholomew), $6-7 \times 3-3.5\ \mu$; on same host, West Va. (Nuttall), $5-6 \times 1.5-2\ \mu$.

69. *Phyllosticta Ellisi*, Sacc. & Sydow.

Sacc. Syll. 14: 851. 1890.

P. Ribis E. & E. Flor. West Va. 5: 102. 1896.

Field Columb. Mus. 9: 102. 1896. not *P. Ribis* Speg.

Spots large, irregular, .5-1 cm., often confluent along the margin of the leaf, rust-color whitening out,

mostly zonate, definite but without any colored margin. Perithecia epiphyllous, scattered, 150-200 μ diam. apex slightly prominent, black. Sporules oblong-elliptical, hyaline, granular, nucleate, 15-22 x 6-9 μ .

Differs from *P. ribicola* Fr. and *P. Grossulariae*, Sacc. in its much larger spores.

70. *Phyllosticta Heteromeles*, Cke. & Hark.

Grev. 9: 84. 1881.

Sacc. Syll. 3: 37. 1884.

Journ. Mycol. 2: 15. 1886.

Exsicc. Ell. & Evrht. N. A. F. 751. Ell. & Evrht. F. Col. 767.

On leaves of *Heteromeles*, California.

Epiphyllous; spots pallid, circular or confluent, occupying mostly the edge of the leaves, border black, raised. Perithecia black, convex, mostly epiphyllous, erumpent, thickly aggregated, 130-200 μ . Sporules hyaline, elliptical, continuous, 8 x 2 μ .

71. *Phyllosticta Labruscae*, Thum.

Pilze. des Weinstockes, 189. 1878.

P. viticola, Thum. Pilze. des Weinstockes, 188. 1878.

P. Ampelopsidis, E. & M. Journ. Mycol. 2: 14. 1886.

Exsicc. Ell. & Evrht. N. A. F. 626, 1169. Seym. & Earle. Econ. Fungi, 410, Sydow. M. March. 4300, Ell. & Evrht. F. Col. 563.

On leaves of *Vitis Labrusca*, common throughout.

Spots yellowish-brown, 5 mm. diam., subcircular, border dark brown. Perithecia black, subglobose, erumpent, circinate near the border, or clustered, epiphyllous, 112-120 μ in diameter. Sporules subhyaline, oblong, ends round, 8-11 x 6-7 μ .

72. *Phyllosticta Myricae*, Cke.

Grev. 6: 136. 1877.

Exsicc. Ell. & Evrht. N. A. F. 535. Rav. F. Am. 154. Ell. & Evrht. F. Col. 840, 273.

On leaves of *Myrica cerifera*, South Carolina (Ravenel), New Jersey (Ellis).

Spots subcircular, reddish-brown, 3-6 mm. diam. with a narrow, darker border. Perithecia clustered on the spots, epiphyllous, minute, 65-75 μ . Sporules minute, ovate-elliptical, 3-3.5 x 1.5 μ .

In *Grevillea* l. c. the sporules are said to be 7 μ long, but we can make them only as above.

73. *Phyllosticta Nyssae*, Cke.

Grev. 12: 26. 1883.
Journ. Mycol. 2: 17. 1886.
Sacc. Syll. 3: 36. 1884.

Exsicc. Rav. F. A. M. 798. Ell. & Evrht. N. A. F. 1168.

On leaves of *Nyssa capitata*, Georgia (Ravenel).

Spots subcircular or irregular, 2-5 mm. diam., gray, with a narrow slightly raised border, surrounded with a purple-shaded border. Perithecia amphigenous but more distinct and prominent above, punctiform, 65-100 μ diam. Sporules subelliptical, 3.5 x 1.5 μ .

74. *Phyllosticta Oleae*, E. & M.

Journ. Mycol. 2: 17. 1886.

On leaves of *Olea Americana*, Florida (Martin).

Spots gray, large, occupying the tips and sides of the leaves, border brown, elevated. Perithecia black, subglobose, prominent, mostly epiphyllous, about 140 μ in diameter. Sporules hyaline, oblong-oval, 18-24 x 3-4 μ .

75. *Phyllosticta vulgaris*, Desm.

Ann. Nat. Hist. 11: 350. 1849.
Sacc. Syll. 3: 18. 1884.
Phoma Virginiana, Ell. & Halsted. Journ. Mycol. 4: 8. 1889.

Exsicc. Ell. & Evrht. N. A. F. 2830.

On leaves of *Prunus Virginiana*, Iowa (Halsted).

Spots subcircular, olivaceous with a tinge of red, fading, with a dark margin. Perithecia epiphyllous, prominent, very small, depressed-globose, amber-colored, becoming darker. Sporules minute, cylindric-

ovate, obtuse, 2-nucleate, hyaline, 10-14 x 2.6-3.5 μ . Found in Europe on *Lonicera*, *Cerasus*, *Viburnum* and *Philadelphus*.

76. *Phyllosticta Sorbi*, West.

Bull. Acad. Belg. II, Ser. XII, No. 7.
Sacc. Syll. 3: 8. 1884.

Exsicc. Ell. & Evrht. N. A. F. 1726.

On leaves of *Pirus Americana*, Missouri (Gal-
loway).

Spots subcircular, rusty-red, 2-4 mm. diam., sub-confluent, becoming white in the center. On the larger spots are often 3-4 of the small, round, white spots about 1 mm. diam. Perithecia not abundant, punctiform, 80-100 μ diam., epiphyllous. According to the description quoted, the sporules are ovoid, 2-guttulate, 5-10 μ . The spec. in N. A. F. do not afford any spores.

77. *Phyllosticta Starbaeckii*, Sacc. & Syd.

Sacc. Syll. 14. 865. 1899.
Phyllosticta Corni, (Schw.) Starb. in Starb. Stud. I Fr.
Svamp. Herb., p. 46.
Sphaeria Corni, Schw. Syn. N. Am. No. 1792 partly.

On leaves of *Cornus florida* Mt. Pocono, Pa.
(Schwemnitz).

Perithecia hypophyllous, very numerous, densely crowded cespitose, mostly 2-3 confluent, base sunk in the epidermis, forming a large 27 mm., irregular, indeterminate, violaceo-cinereous or cinereous-brown spot, globose, minutely perforated above, of coriaceous texture, 75-125 μ diam. Sporules very minute, spermatoid ellipsoid, hyaline 1.5-2 x .5-1 μ .

78. *Phyllosticta globifera*, E. & E.

Flor. West Va. 104. 1896.

On leaves of *Cornus florida*.

Spots marginal, light brown, occupying the tip of

the leaf and extending part way down each side, .5-1 cm. wide and separated from the green part of the leaf by a narrow, purple margin. Perithecia amphigenous, discoid, black, 100-115 μ diam. Sporules globose or short-elliptical, hyaline, granular, 6-8 x 5-6 μ .

79. *Phyllosticta cornicola*, (DC.)

Xyloma cornicola, DC. Flor. Fr. 6: 148. 1815.

Depazea cornicola, Fr. S. M. 2: 530. 1822.

Phyllosticta cornicola, Rabh. in Kl. Herb. Mycol. No. 454.

On *Cornus florida*, West Va. (Nuttall).

Spots of various size and shape, from 2 mm.-2 cm. dirty brown, becoming lighter in the center, border dark-red. Perithecia epiphyllous, scattered, black, lenticular, 80-100 μ diam. (150-200 μ Sacc.) Sporules ovate, elliptical or subglobose, 5-8 x 4-6 μ (7-9 x 3-4 μ Sacc.) The spec. distributed in Ell. & Evrht. N. Am. Fungi No. 2833 are *Septoria cornicola* Desm.

80. *Phyllosticta Persicae* Sacc.

Mich. 1: 147. 1878.

On peach leaves, Ohio (Kellerman).

Spots sub-circular, 3-5 mm. diam., brown, becoming gray in the center, often concentrically zonate, border dark red. Perithecia epiphyllous, dark-brown, lenticular, 80-112 μ diam., scattered. Sporules oblong or navicular, greenish-hyaline, 5-7 x 2.5-3 μ .

81. *Phyllosticta rubra*, Pk.

35th Rep. N. Y. State Mus. p. 138.

On leaves of *Crataegus tomentosa*, N. Y. State (Peck).

Spots small, angular or irregular, sometimes confluent, red. Perithecia 1-5 on a spot, epiphyllous, minute, black. Sporules broad-elliptical or subglobose, 8 x 6 μ , hyaline.

82. *Phyllosticta*? *Crataegi*, Cke.*Cheilaria Crataegi*, Cke. Grev. 12: 25. 1883.*Phyllosticta Crataegi*, Sacc. Syll. 3: 6. 1874.

Exsicc. Rav. F. Am. 576.

On leaves of *Crataegus*, So. Carolina (Ravenel).

Perithecia erumpent, light brown, very delicate, sublaciniately dehiscent above, hypophyllous, scattered or loosely clustered, 100-120 μ diam. Sporules oblong or oval, hyaline, 3-4 x 1.5 μ . The leaves are also marked on both sides with small, rusty-brown spots, but the perithecia are scattered over the entire lower face of the leaf and are not confined to the spots on leaves of *Crataegus oxyacantha*.

83. *Phyllosticta leucothoes*, E. & M.

Am. Nat. 1264. 1884.

Exsicc. Ellis N. A. F. No. 1369.

On leaves of *Leucothoe acuminata*, Florida (Martin.)

Spots rusty brown, large, involving the apices or often the upper half of the leaves, distinctly limited. Perithecia black, globose, few, scattered, epiphyllous, deeply immersed, or but slightly prominent, 150-200 μ in diameter. Sporulae hyaline, ovate, oblong, granular, or 2-3 nucleate, 15-21 x 6-7 μ . Differs from *P. terminalis* in color of spots and larger spores.

84. *Phyllosticta Nerii*, West.

Kekx. Flor. Fland. 1: 148. 1867.

On leaves of *Nerium Oleander*, Florida (Martin.)

Spots oval, or subcircular, light gray to white, 10-18 millim., border brown, elevated. Perithecia amphigenous, tardily erumpent, scattered, black, 200-250 μ . Sporules hyaline, oval, 1-2 nucleate, 15-18 x 4-6 μ , cloudy, or 1-guttulate.

85. *Phyllosticta Toxicodendri*, Thum.

Sacc. Syll. 3: 16. 1884.

On leaves of *Rhus Toxicodendron*, South Carolina (Ravenel).

Spots small, reddish-brown, irregular, or subcircular, border dark red. Perithecia epiphyllous, scattered, or solitary, black, medium size, lenticular. Sporules ellipsoid, hyaline, guttulate, $1.5 \times 1 \mu$.

86. *Phyllosticta toxica*, E. & M.

Am. Nat. 1882, p. 1002.

Exsicc. Ell. & Evrht. N. A. F. 1162.

On fading leaves of *Rhus Toxicodendron*, Iowa (Holway).

Spots gray, round, small, border dark brown. Perithecia black, epiphyllous, innate, 70μ in diameter. Sporules subhyaline, oval, subglobose, granular $6-7.5 \mu$. This has the aspect of *Cylindrosporium Toxicodendri*, E. & E. but the perithecia are much smaller and the sporules entirely different.

87. *Phyllosticta rhoicola*, E. & E.

Proc. Phil. Acad. 356. 1894.

On leaves of *Rhus Toxicodendron*, West Virginia (Nuttall.)

Spots 4-6 mm. diam. deciduous, grayish-white, with a narrow black border. Perithecia epiphyllous, scattered, $100-110 \mu$ diam., convex-prominent above, visible also below. Sporules narrow elliptical, hyaline, 2-nucleate, $5-6 \times 2-3 \mu$. Differs from *P. toxica* E. & M. in its larger deciduous spots with a narrow border, and its narrow elliptical sporules.

88. *Phyllosticta Celtidis*, E. & K.

Journ. Mycol. 4: 27. 1888.

Exsicc. Ell. & Evrht. N. A. F. 2836. Ell. & Evrht. F. Col. 661.

On leaves of *Celtis occidentalis*, Kansas (Bartholomew.)

Spots amphigenous, dirty brown, subcircular or more or less irregular, 2 mm.-1 cm. in diameter, becoming paler (subcinereous) above. Perithecia minute, black, hypophyllous, filled with minute, oblong sporules, 3-4 x .5-.75 μ , hyaline.

89. *Phyllosticta Clematidis*, Ell. & Dearness.

Canadian Rec. of Sci. 268. 1893.

On leaves of *Clematis Viorna* var. *coccinea*, London, Canada (Dearness).

Spots mostly marginal, then yellowish or withered but when not on the margin whitish, circular, 1-3mm. with a narrow reddish border. Perithecia brown, epiphyllous, 50-75 μ . Sporules ovate-elliptical, 4-6 x 2.5-3 μ .

90. *Phyllosticta punctata*, E. & D.

Can. Rec. Sci. 268. 1893.

Exsicc. Ell. & Evrht. N. A. F. 2832, 3056. Ell. & Evrht. F. Col. 1245.

On leaves of *Viburnum opulus*, Canada (Dearness).

Spots small, .5-1mm., angular, often confluent, diaphanous, bordered by an obscure reddish line, finally deciduous. Perithecia brownish, epiphyllous but visible from under side, 50-100 μ . Sporules amber-colored, elliptic-oblong, 6-8 x 3 μ .

This perhaps should be referred to *P. decidua* E. & K. from which it differs only in its more irregularly shaped spots more inclined to confluence and its rather larger sporules.

91. *Phyllosticta lentaginis*, Sacc. & Syd.

Sacc. Syll. 14: 865. 1899.

Phyllosticta Viburni, E. & D. Can. Rec. Sci. 368. 1893.

On leaves of *Viburnum lentago*, London, Canada (Dearness).

Spots amphigenous, rusty-brown, circular, about 2 mm., with a narrow, dark border. Perithecia epiphyllous, semi-erumpent, black, convex, 100-125 μ . Sporules elliptical, brownish, 4-5 x 2.5-3 μ .

92. *Phyllosticta Gelsemii*, E. & E.

Journ. Mycol. 7: 131. 1891.

On leaves of *Gelsemium sempervirens*, Cult. New-field, N. J.

Spots subcircular, 2-4 mm. diam., or often occupying the apex of the leaf, pale yellow-brown with a purple border. Perithecia amphigenous, lenticular, black, small, gregarious, shining, rather more abundant above. Sporules oblong-cylindrical, 12-16 x 3 μ .

93. *Phyllosticta Everhartii*, Sacc & Syd.

Sacc. Syll. 14. 865. 1899.

Phyllosticta Araliae, E. & E. Proc. Acad. Nat. Sci. Phil. 355. 1894.

On leaves of *Aralia spinosa*, West Va. (Nuttall.)

Spots subcircular, light-brown, with the margin a little darker, .5-1 cm. diam. Perithecia epiphyllous, somewhat flattened, 100-150 μ diam. Sporules oblong-elliptical, hyaline, 2-nucleate, 10-15 x 5-6 μ .

94. *Phyllosticta lantanoidis*, Pk.

38th Rep. N. Y. State Mus. 94. 1886.

On leaves of *Viburnum lantanoides*, Caroga, N. Y. (Peck).

Spots rather large, subcircular, cinereous, sometimes with a brown margin. Perithecia minute, 100 μ diam., slightly prominent, epiphyllous, black. Sporules elliptical, hyaline, binucleate, 6-8 x 4 μ . Differs from *P. tineae*, Sacc. in its larger sporules.

95. *Phyllosticta Hamamelidis*, Pk.

39th Rep. N. Y. State Mus. 94. 1886.

Exsicc. Ell. N. A. F. 1154. Ell. & Evrht. F. Col. 434. Rav.
F. A. M. 511.Common on *Hamamelis Virginiana*.

Spots dark brown above, light brown below, large sometimes occupying half the leaf, irregular, angular. Perithecia small, 100 μ , amphigenous, black. Sporules broad-ellipsoid, hyaline, 12.5-15 x 8.5-10 μ , often with a single large nucleus. Erroneously issued in the Exsiccati above quoted as *Phyllosticta Hamamelidis* Cke.

96. *Phyllosticta Negundinis*, Sacc. & Speg.

Mich. 1: 149. 1878.

Sacc. Syll. 3: 13. 1884.

Exsicc. Ell. & Evrht. N. A. F. 3154.

On leaves of *Negundo aceroides*, N. Y. State (Peck), West Va. (Nuttall.)

Spots various, drying to yellowish-red. Perithecia scattered, punctiform, lenticular, 100-120 μ diam., rather broadly perforated above, of loose parenchymatic texture, brownish. Sporules ellipsoid, 6-7 x 3-4 μ , obsoletely 2 nucleate, hyaline.

97. *Phyllosticta variabilis*, Pk.

35th Rep. N. Y. State Mus. 138. 1884.

On leaves of *Rubus odoratus*, Albany, N. Y. (Peck).

Spots small or tolerably large, subcircular or irregular, brown or purplish-brown, with small, white areas in the center at first, finally arid throughout. Perithecia minute, epiphyllous, black. Sporules oblong-ellipsoid, 5-7 x 2.5-3 μ . *Phyllosticta bicolor*, Pk., 43d Rep. 26. 1890, on the same host, is evidently the same thing.

98. *Phyllosticta maculans*, E. & E.

Proc. Phil. Acad. 157. 1893.

Exsicc. Ell. & Evrht. N. A. F. 2837.

On fallen leaves of *Populus monilifera*, Kansas (Bartholomew.)

Perithecia mostly epiphyllous, erumpent-superficial, black, subglobose, 50-70 μ diam., pierced above, collected in groups, 2-3 mm. in diameter, but sometimes the perithecia are scattered between the groups. Sporules oblong-cylindrical, hyaline, continuous, straight or very slightly curved, 10-14 x 3-3.5 μ . There are no distinct spots, but the numerous groups of perithecia give the leaf a mottled appearance.

99. *Phyllosticta populina*, Sacc.

Sacc. Syll. 3: 33. 1884, Ell. & Evrht. N. A. F. 2835.

On leaves of *Populus monilifera*, Kansas (Bartholomew).

Spots angular, whitening out in drying, with a dark colored margin. Perithecia punctiform, perforated above. Sporules ellipsoid or ovoid, subolivaceous 4.5-6 x 2.5-3 μ . Mr. Peck finds a var. of this on *Populus monilifera*, in N. V. State, with spots orbicular, very small, white with a brown border; perithecia 1-4 on a spot.

100. *Phyllosticta Rosae*, Desm.

Kieckx. Flor. Fl. I, 416.

On leaves of *Rosa humilis*, West Va. (Nuttall).

Spots subcircular, greenish, becoming subcinereous with a purple border. Perithecia epiphyllous, very small, semi-immersed, black, globose, scattered. Sporules cylindrical, obtuse, 3-4 guttulate; 7.5 x 2-2.5 μ .

101. *Phyllosticta Caryae*, Pk.

40th Rep. 57. 1887.

P. Caryae, E. & E. Journ. Mycol. 101. 1888.*P. caryogena*, Sacc. Syll. 10: 119. 1892.

Exsicc. Ell. & Evrht. N. A. F. 2155, 2677.

On various species of *Carya* from Maine to Kansas.

Spots large, irregular, often confluent, often acute at each end, with a nerve of the leaf running through the center, .5-1 cm. diam., yellowish at first, becoming brown, with the margin darker. Perithecia epiphyllous, minute, lenticular, black-brown, 100 μ broad. Sporules oblong or ellipsoid-oblong, 5-8 x 2-2.5 μ . The fungus is also found on old insect-galls on the same leaves. The 40th Rep. was given to the public in May 1888. *P. Caryae* E. & E. was not published till October, 1888. *P. Caryae* Pk. and *P. Caryae* E. & E. are evidently the same.

102. *Phyllosticta Macluræ*, E. & E.

Journ. Mycol. 5: 145. 1889.

On leaves of *Maclura aurantiaca*, Newfield, N. J.

Spots dark red-brown, subirregular and subindefinite, often marginal and confluent, .25-1 centimeter in diameter. Perithecia epiphyllous, prominent, .33 millimeter in diameter. Sporules ovate-oblong or fusoid-oblong 2-4 nucleate 10-12 x 3 μ .

103. *Phyllosticta asiminae*, E. & K.

Am. Nat. 17. 1883.

Exsicc. Ell. & Evrht. N. A. F. 1164, 1883. Seym. & Earle. Econ. Fungi, 103, Ell. & Evrht. F. Col. 431.

On leaves of *Asimina triloba*, Illinois (Seymour), West Va. (Nuttall).

Spots pale brown, irregular, .5-1 cm. broad, the border dark, narrow, raised. Perithecia black, subglobose, barely erumpent, epiphyllous, scattered, 100-125 μ in diameter. Sporules obovate, subhyaline, tinged with green, 7-9 x 5-6 μ .

104. *Phyllosticta solitaris*, E. & E.

Proc. Phil. Acad. 430. 1895.

On leaves of *Pirus coronaria*, Indiana (Underwood).

Spots minute, 1 mm., round, pale white with a darker border. Perithecia epiphyllous, solitary, one in the center of each spot, $75\ \mu$ diam. Sporules subglobose, hyaline, nucleate, $5\text{--}6\ \mu$ diam.

105. *Phyllosticta pirorum*, Cke.

Grev. 3: 7. 1884.

Journ. Mycol. 2: 26. 1886.

Exsicc. Rav. F. Am. 512.

On pear leaves, So. Carolina (Ravenel.)

Spots white, large, often occupying the half or whole of a leaf, margin purple. Perithecia black, scattered, convex, epiphyllous. Sporules linear, straight or curved, hyaline, $10 \times 2\ \mu$.

106. *Phyllosticta pirina*, Sacc.

Mich. I: 134. 1878.

Journ. Mycol. 2: 17. 1886.

Exsicc. Ell. & Evrht. N. A. F. 1370.

Common on leaves of pear and apple trees.

Spots gray-brown, pallid, dry, variable, occupying the apices and sides of the leaves. Perithecia black, flattened, erumpent, epiphyllous, $130\text{--}155\ \mu$. Sporules hyaline, slightly smoky, ovoid, ends obtuse, $4.5\text{--}6 \times 3\ \mu$. Perithecia mostly epiphyllous, punctiform, lenticular, erumpent.

107. *Phyllosticta zonata*, E. & E.

Bull. Torr. Bot. Club. 54. 1900.

On living leaves of *Pirus Ioensis*, Iowa (H. Harold Hume.)

Spots irregular, reddish-brown, 2-10 mm. in diam.

or confluent over the greater part of the leaf; zonate, definite, with margin very slightly raised and a little darker. Perithecia punctiform, minute, innate, covered by the thin, whitish epidermis, epiphyllous. Sporules oblong-elliptical, $3.5-4 \times 1.5 \mu$.

Differs from *P. Briardi* Sacc. and *P. limitata* Pk. in its smaller sporules and zonate spots.

108. *Phyllosticta limitata*, Pk.

50th Rep. N. Y. State Mus. 115. 1887.

On living leaves of *Pirus Malus*, Queens Co., N. Y. (Stewart.)

Spots circular, small (2-6 mm.), subconfluent, brown or reddish-brown sometimes becoming gray or having a grayish center, often sterile, definitely limited and surrounded by a narrow, slightly raised, brown or blackish-brown margin. Perithecia epiphyllous minute, few, punctiform, black. Sporules ellipsoid, $7-8 \times 4$.

109. *Phyllosticta leucocarpae*, Atk.

Bull. Cornell Univ. III, No. 1, 31. 1897.

On leaves of *Pirus leucocarpa*, Alabama (Atkinson).

Spots amphigenous, subcircular, white, dry, narrowly brown margined. Perithecia amphigenous, black, flattened, subprominent, $120-140 \mu$ diam. Sporules cylindrical, hyaline, $10-14 \times 3-4 \mu$.

110. *Phyllosticta Lycii*, E. & K.

Am. Nat. 1166. 1883.

Exsicc. Ell. N. A. F. 1157.

On leaves of *Lycium vulgare*, Ohio (Kellerman.)

Spots brown, turning white, circular, 1-2 millim., border thickened. Perithecia black, lenticular, amphigenous, scattered, 100-140 millim. in diameter. Sporules hyaline elliptical, ends subacute, $6-12 \times 2-3 \mu$.

III. *Phyllosticta Halstedii*, E. & E.

Journ. Mycol. 5: 146. 1889.

On living leaves of *Syringa vulgaris*, New Jersey (Halsted.)

Spots amphigenous, subrotund, red-brown, .25 to 1.25 centimeters in diameter, concentrically wrinkled or zoned, with a definite, narrow, dark border. Perithecia few, lenticular, 100-150 μ in diameter, innate generally visible on both sides of the leaf. Sporules broad fusoid-oblong, not curved, granular, 15-20 by 5-7 μ , ends rounded. The specimens of *Phyllosticta syringae*, West, in De Thumen's Mycotheca 1490 agree very well with the description in Sylloge, having sporules 6-8 x 2.5-3 μ , but specimens in Fungi Gallici 136 are the same as the New Jersey specimens; spots concentrically wrinkled, and sporules 15-20 x 5-7 μ . De Thumen's Mycotheca, 1672, on leaves of *Syringa Chinensis*, does not seem to be a *Phyllosticta*.

112. *Phyllosticta Liriodendri*, Cke.

Grev. 12: 26. 1833, *P. liriodendrica*, Sacc.

Syll. 3: 30. 1884, *P. circumallata*, Winter.

Journ. Mycol. 1: 123. 1885. id. 2: 14. 1886.

On leaves of *Liriodendron tulipifera*, Missouri, (Demetrio), So. Carolina (Ravenel).

Spots gray, round, 5 millim. in diameter, border dark brown, elevated. Perithecia scattered, mostly epiphyllous, lenticular, black, membranous, 100-120 μ in diameter. Sporules elliptic, ends acuminate, hyaline, continuous, with two large nuclei, 7-9 x 3.5-4 μ .

113. *Phyllosticta macrospora*, E. & E.

Proc. Phil. Acad. 355. 1893.

Exsicc. Ell. & Evrht. N. A. F. 3256.

On leaves of *Liriodendron tulipifera*, West Va., (Nuttall.)

Spots few, subcircular, ferruginous-gray, 3-5 mm.

diam., with a narrow, raised, darker border. Sporules oblong-elliptical, hyaline, nucleate, 15-30 (mostly 20-25 x 6-7 μ .)

114. *Phyllosticta Platani*, Sacc. & Speg.

Mich. 1: 153. 1879
Journ. Mycol. 2: 17. 1886.

On leaves of *Platanus*, Kansas (Kellerman) ?

Spots large, brown, turning gray. Perithecia dark brown, lenticular, erumpent, mostly hypophyllous, 90 μ in diameter. Sporules hyaline, oblong, 4 x 1 μ . In *Michelia*, lc. the species is described as follows: "Spots obsolete. Perithecia scattered, punctiform, lenticular, yellow. Sporules ovoid-oblong, 5-6 x 1-1.5 μ minutely 2 guttulate, cloudy-hyaline."

115. *Phyllosticta Catalpae*, E. & M.

Am. Nat. 18: 189. 1884.

Exsicc. N. A. F. No. 1368.

On leaves of *Catalpa bignonioides*. Common on this host.

Spots pale brown, circular, .5-7 millim. in diam. border darker. Perithecia brown, lenticular, epiphyllous, scattered, often sterile, 112 x 84 μ . Sporules subhyaline, oval, .5-7 x 2.5-4.5 μ .

116. *Phyllosticta Coryli*, West.

Bull. Acad. Belg. II, Ser. XIX, No. 9.

Exsicc. Ell. & Evrht. N. A. F. 2682.

On leaves of *Corylus Americana* and *C. rostrata*, common but mostly sterile; also on *C. Avellana* cult.

Spots various, irregular in shape, reddish-brown whitening out. Perithecia minute, epiphyllous, often in small groups of 5-7. The measurements given for the sporules are 7-8 x 2-3.5 μ , but generally the perithecia are without spores.

117. *Phyllosticta concomitans* E. & E.

Journ. Mycol. 4: 9. 1888.

On living leaves of *Ilex decidua* with *Amerosporium ilicinum*, E. & E., Louisiana (Langlois.)

Spots amphigenous, of irregular shape, 2-3 mm. diam., definite, mostly with a very narrow, slightly raised border, around which is a narrow belt of purplish discoloration, thin and finally deciduous, white above, rusty white below. Perithecia minute scattered, immersed, opening above, but with their bases slightly prominent below. Sporules oblong, hyaline, 5-7 x 1.5-2 μ .

118. *Phyllosticta Haynaldi*, Roum.

Mich. 2: 342. 1880.

On leaves of *Ilex verticillata*, West Va. (Nuttall.)

Spots epiphyllous, indistinct, vinous-rose-color. Perithecia densely gregarious, lenticular, .125 mm. diam., perforated, covered by the epidermis. Sporules ovoid, biguttulate, 5 x 2 μ . (Sec. Nuttall 5-8 x 2.5-3 μ).

119. *Phyllosticta opaca*, E. & E.

Millspaugh & Nuttalls, Flor. West Va. 106. 1896.

Exsicc. Ell. & Evrht. N. A. F. 3443, Ell. & Evrht. F. Col. 956.

On leaves of *Ilex opaca*, West Va. (Nuttall.)

Spots mostly marginal or terminal. of irregular shape, 1-2 cm. across, dirty-white, with a narrow, subferruginous, raised border. Perithecia evenly scattered on the spots, subepidermal, sublenticular, black, 200 μ diam., raising the epidermis into pustules. Sporules elliptical, hyaline, 3 x 1.5 μ .

120. *Phyllosticta prini*, Pk.

43d Rep. 26. 1890.

On leaves of *Ilex verticillata*, Catskill Mts., N. Y. (Peck.)

Spots small, subcircular, white or grayish above, brownish beneath. Perithecia small, $175\ \mu$, epiphyllous, depressed, black. Sporules elliptical or oblong, $7.5-12.5 \times 4\ \mu$.

121. *Phyllosticta terminalis*, E. & M.

Am. Nat. 18: 70. 1896.

On leaves of *Ilex Dahoon*, Florida (Martin.)

Spots large, brown, becoming nearly white, border purple, black, narrow. Perithecia black, globose, slightly prominent beneath the cuticle, epiphyllous, $100-120\ \mu$ in diameter. Sporules hyaline, ovoid, ends obtuse, $15 \times 4.5\ \mu$.

122. *Phyllosticta Paviae*, Desm.

P. sphaeropsoides, Ell. Bull. Torr. Bot. Club. 10: 97. 1883.

Exsicc. Ell. N. A. F. No. 1159, Seym. & Earle Econ. Fungi 117, Ell. & Evrht. F. Col. 276.

On living leaves of *Aesculus hippocastanum*, Newfield, N. J. (Ellis). Massachusetts (J. G. Jack). On *Aesculus glabra*, Indiana (Underwood.)

Spots reddish-brown, .5 cm. in diameter, sometimes confluent, border light yellow. Perithecia brown, scattered, punctiform, epiphyllous, but visible beneath, $120\ \mu$. Sporules globose, or ovoid, hyaline, granular, 1-2 nucleate, $12-15 \times 8-10\ \mu$, basidia stout.

123. *Phyllosticta aesculicola*, Sacc.

Mich. 1: 134. 1878.

P. Aesculi, E. & M. Journ. Mycol. 2: 130. 1886.

On living leaves of *Aesculus glabra*, Missouri (Galloway.)

Spots large, often occupying half the surface of the leaf, light rusty-yellow, with a dark border, becoming lighter at length. Perithecia punctiform,

minute (40-50 μ), scattered, brown. Sporules oblong-cylindrical, 3-4 x 1 μ .

Differs from *P. Pariae* in its much smaller perithecia and sporules.

124. *Phyllosticta sinuosa*, E. & M.

Am. Nat. 18: 1264. 1884.
Ellis N. A. F. No. 1367.

On leaves of *Olea Americana*, Florida (Martin).

Spots circular, reddish-brown, turning nearly white, mostly 2-3 millim. in diameter. Perithecia black, lenticular, epiphyllous, scattered, mostly near the margin of the spots, 150 μ in diameter. Sporules hyaline, oblong, or clavate-oblong, 6-15 x 1.5 μ , but apparently immature.

125. *Phyllosticta Hesperidearum*, (Catt.) Penz.

Phoma Hesperidearum, Catt. Mic. Afr. 10. 1882.
Phyllosticta Hesperidearum, Sacc. Mich. 2: 425. 1882.

On leaves of lemon trees in a greenhouse, Fort Collins, Colorado (C. F. Baker.)

Spots circular, irregular or sinuous, brown, turning yellow and finally cinerous and white, 1-3 cm. diam. with a purplish-brown border. Perithecia small, black, innate, with a large round opening above. Sporules elliptical, rounded at the ends, hyaline 5-6 x 3.5-4 μ , (3-4 x 2-2.5 μ Sacc.)

126. *Phyllosticta extensa*, Sacc.

Syll. 14: 852. 1890.

Phyllosticta Eucalypti, E. & E. in Bull. Torr. Bot. Club. 286. 1897, not Thum. in Sacc. Syll. 3: 9. 1884.

On the dead brown extremities or upper half of the leaves of *Eucalyptus*, California (Bethel).

Perithecia amphigenous, evenly scattered, innaterumpent, globose, 100-120 μ diam. Sporules oblong, 5-8 x 1.5-2.5 μ .

127. *Phyllosticta melaleuca*, E. & E.

On leaves of *Ulmus Americana*, Tuskegee, Ala., Sept. 1900. (G. W. Carver No. 419).

Leaves marked with irregularly shaped, subangular spots which are deep brown below and grayish-brown above, 2-4 mm. or by confluence 1 cm. or more in extent. Perithecia epiphyllous, scattered sparingly over the spots and over the green parts of the leaf, semierumpent, black, but surrounded by a narrow ring of the ruptured whitened cuticle, 100-120 μ diam. Sporules subglobose, 3 μ diam. or elliptical 3-4 x 2-2.5 μ , smoky-hyaline. On the gray spots are other, smaller (75-80 μ) sterile perithecia.

128. *Phyllosticta erratica*, E. & E. n. sp.

On leaves of *Ulmus Americana* & *U. fulva*, *Rosa* sp., and tea plant (*Thea* sp. cult.) Tuskegee, Ala. Sept. 1900. (G. W. Carver, Nos. 499, 501, 577.)

On dead, brown parts of the leaves, mostly marginal. On *Ulmus* the dead part of the leaf is sharply defined, but on the other hosts there is no definite line of separation. Perithecia hypophyllous, subcuticular, raising the epidermis into hemispherical pustules pierced at the apex, 75-80 μ diam., gregarious or in small groups. Sporules globose or short-elliptical, hyaline, 6-8 μ in the longer diameter.

Notes and Corrections.

Phyllosticta affinis, E. & K.

Am. Nat. 1165, 1883.
Ell. & Evrht. N. A. F. No. 2666.

This is a *Gloeosporium* and not a *Phyllosticta*. See Proc. Phil. Acad. 371. 1894.

Phyllosticta Sassafras, Cke.

Grev. 12: 26. 1883.
Exsicc. Ell. & Evrht. N. A. F. 1722. Rav. F. Am. 915.

All the specimens are sterile and the species must be considered doubtful.

Phyllosticta tineae, Sacc.

The spec. distributed in Ell. & Evrht. N. A. F. 3257 are not this species, at least in my copy, but a *Septoria*.

Phyllosticta Euonymi, Sacc.

In Ell. & Evrht. N. A. F. 2675 is a *Septoria*, *S. spiculisporea*, E. & E. n. sp., at least in some copies of N. A. F.

Phyllosticta corylina, E. & M.

In Am. Nat. 18. 1264 is *Gloeosporium Coryli*, Desm. See Journ. Mycol. 1: 114. 1885.

II. On leaves of dicotyledonous herbaceous plants.

129. *Phyllosticta Amaranthi*, E. & K.

On *Amaranthus retroflexus*, Kansas (Kellerman.)

Spots reddish-brown, 2-4 mm. diam., paler in the center, border darker, purplish-red, slightly raised. Perithecia epiphyllous, depressed-globose, 110-140 μ diam., 6-12 on a spot. Sporules hyaline, elliptical, 1-2 nucleate, 6-11 x 3-5 μ .

Differs from *P. Atriplicis*, Desm. in its larger perithecia and sporules. *P. Atriplicis*, Desm., as represented in Mycotheca Marchica 2383, has globose perithecia only 40-60 μ diam. which, though abundant are buried in the substance of the leaf so as to be scarcely perceptible, and sporules only 6-8 x 1.5-2.5 μ . Possibly the Kansas spec. might be considered a var. of *P. Atriplicis*, but if so, it is a strongly marked var.

130. *Phyllosticta Astragali*, Pk.

Bot. Gaz. 275. 1881.

On leaves of *Astragalus*, Canada (Macoun.)

Spots obsolete. Perithecia numerous, often amphigenous, 180-230 μ diam., partially covered by the fissured epidermis. Sporules hyaline, oblong, or oblong fusiform, 13-16 x 3 μ .

131. *Phyllosticta Mentzeliae*, E. & K.

Journ. Mycol. 2: 4. 1886.

On leaves of *Mentzelia nuda*, Western Kansas.

Spots pallid, circular, or oval, 5-8 millim. Perithecia amphigenous, dusky, innate-erumpent, subglobose, 100-130 μ diam., scattered, several on a spot. Sporules oblong-oval, subhyaline, slightly dusky, 6 x 3 μ .

132. *Phyllosticta Apocyni*, Trelease.

Prelim. List. par. Fungi of Wis. 19. 1884.

Phyllosticta Apocyni, E. & M. Am. Nat. 18: 1264. 1884.

Exsicc. Ell. & Evrht. N. A. F. 2678, Ell. & Evrht. F. Col. 361.

On leaves of *Apocynum cannabinum*, Newfield, N. J. (Ellis), Wisconsin (Trelease).

Spots brown, round, 1-2 millim. diam., border dark, narrow, slightly raised. Perithecia dark brown, subglobose, erumpent, epiphyllous, mostly in the middle of the spots, 75 μ in diameter. Sporules subhyaline, oval, contents granular, 7-9 x 6 μ .

The publication of this species by Prof. Trelease appears to have priority, his paper above cited bearing date Nov. 1884, and that of E. & M., December of the same year.

133. *Phyllosticta Batatas*, (Thum.)

Syn. *Depazea Batatas*. Thum. in M. U. No. 598. 1875.

Phyllosticta Batatas, Cke. Grev. 7: 35. 1878.

Phyllosticta bataticola, E. & M. Journ. Mycol. 2: 20. 1886.

Exsicc. Ell. & Evrht. N. A. F. 1155. Rav. F. Am. 264.

Spots round or irregular, 2-5 mm. diam., light-ferruginous, paler in the center, with a narrow, slightly raised border. Perithecia epiphyllous, dark-brown

100-125 μ diam., scattered. Sporules ovoid or elliptical 6-7.5 x 4.5.

134. *Phyllosticta Cornuti*, E. & K.

Bull. Torr. Bot. Club. 2: 115. 1884.

On leaves of *Asclepias Cornuti*, Kansas (Kellerman.)

Spots indistinct, brown, nearly round, or limited by the veinlets, more or less confluent, 2-3 millim. Perithecia black, thickly scattered, slightly erumpent, amphigenous, 70-100 μ . Sporules slightly colored, oblong cylindrical, or oval, 5 x 4 μ .

135. *Phyllosticta sphaeropsispora*, E. & E.

Bull. Torr. Bot. Club. 286. 1897.

On leaves of *Solidago confinis*, Calif. (McClatchie.)

Spots subcircular, white, 3-10 mm. diam., with a narrow, brown, slightly raised margin. Perithecia epiphyllous, hemispheric-prominent, black, 100-120 μ diam. Sporules obovate-elliptical, 13-16 x 6-7 μ , brownish on stout pedicels 15 x 2.5 μ .

136. *Phyllosticta gallicola*, E. & E.

Bull. Torr. Bot. Club. 286. 1897.

Parasitic on the fungoid gall known as "*Rhytisma Solidaginis*," Schw. Colorado, 1896. (Bethel, No. 221,) Perithecia numerous, amphigenous, globose, about 210 μ diam., fringed with brown mycelium, buried except the erumpent apex, which is rather broadly perforated. Sporules elliptical, smoky-hyaline, 6-15 x 6-8 μ .

137. *Phyllosticta cylindrica*, Sacc. & Syd.

Sacc. Syll. 14: 853. 1899.

Phyllosticta Heucherae, E. & E. in Am. Nat. 428. 1897, not *P. Heucherae*, Brun.

On leaves of *Heuchera cylindrica*, near Lake Waha, Idaho, June, 1896 (A. A. & E. G. Heller.)

Perithecia amphigenous, hemispherical, suberumpent, broadly perforated above, $110\ \mu$ diam., crowded in circular patches, .5-1 cm. diam. Sporules abundant, cylindrical, hyaline, $5-6 \times 1-1.25\ \mu$. Probably the spermoginal stage of some dothideaceous fungus.

138. *Phyllosticta Fraseriae*, E. & E. n. sp.

On leaves of *Fraseria*, Northern Colorado, (C. F. Baker.)

Perithecia gregarious in narrow strips 1-3 cm. long by 2-4 mm. wide, innate, papilliform-prominent on both sides of the leaf, especially above, globose, perforated above, $80-100\ \mu$ diam. Sporules oblong, binucleate, $3-4 \times 1\ \mu$.

Very distinct from *Marsonia Fraseriae* E. & E. and *Ascochyta Fraseriae* E. & E. Has the same habit and general appearance as *Septoria brunneola*, (Fr.)

139. *Phyllosticta Chrysanthemi*, E. & D.

Can. Rec. Sci. 268. 1893.

On leaves of *Chrysanthemum Sinense*, London, Canada (Dearness.)

Spots circular, 1-3 mm. purplish-brown, with an obtuse raised border, sometimes confluent and finally deciduous. Perithecia epiphyllous, black, innate, minute, $80-100\ \mu$. Sporules elliptical, obtuse, smoky-hyaline, $4-5 \times 2.5-3\ \mu$.

140. *Phyllosticta minor*, E. & E. n. sp.

On dead leaves or dead tips of the leaves of *Vinca minor*, Newfield, N. J., July, 1900.

Perithecia amphigenous, punctiform, minute, scattered over the whole or a part of the leaf and raising the cuticle into little pustules. Sporules globose, $5-7\ \mu$ diam., with a single large nucleus.

141. *Phyllosticta Mucunae*, E & E.

On leaves of *Mucuna utilis*, Tuskegee, Ala.
(Geo. W. Carver, 430.)

Spots minute, white, round, 1-3 mm. diam., white with a narrow, dark brown, raised border, soon confluent for 2-3 cm. and then mostly extending out to the margin of the leaf. Perithecia amphigenous, small (75-100 μ), subhemispheric-prominent, black. Sporules oblong-elliptical, 4-6 x 2-2.5 μ .

142. *Phyllosticta orbicula*, E. & E.

Proc. Phil. Acad. 455. 1893.

On leaves of *Nasturtium armoracia*, London, Canada (Dearness.)

Spots amphigenous, circular, thin, white, 1-1.5 μ diam. with a narrow, light colored margin on both sides of the leaf. Perithecia mostly epiphyllous, discoid, black, 80-120 μ diam., erumpent superficial. Sporules oblong-elliptical or ovate, hyaline or sub-olivaceous, 4-6 x 2.5-3 μ .

Differs from *Ph. anceps* Sacc. in its broader, differently shaped, subolivaceous sporules.

143. *Phyllosticta tenerrima*, E. & E.

Proc. Phil. Acad. 156. 1893.

On living leaves of *Saponaria officinalis*, London, Canada (Dearness.)

Spots small (1-2 mm.) thin, round, white and transparent and finally deciduous, numerous but mostly not confluent. Perithecia epiphyllous, depressed-hemispherical, thin membranaceous, 60-100 μ diam., few on a spot. Sporules elliptical or oblong-elliptical, hyaline, 4-6 x 2-2.5 μ , abundant.

Easily recognized by its thin, white, transparent spots.

144. *Phyllosticta astericola*, E. & E.

Proc. Phil. Acad. 157. 1892.

On leaves of *Aster umbellatus*, Wisconsin (Davis).

Spots subcircular, 1-2 mm. diam., dark brown, margin mostly subrepand and surrounded with a yellowish discoloration, often confluent, paler below. Perithecia epiphyllous, prominent, black, 150-200 μ diam. Sporules abundant, almond shaped, hyaline, mostly 2-nucleate, 8-11 x 4 μ .

145. *Phyllosticta nicotiana*, E. & E.

Proc. Phil. Acad. 157. 1893.

On leaves of tobacco, North Carolina (McCarthy).

Spots amphigenous, large (.5-1.5 cm.), irregular in shape, pale dirty brown, lighter in the center, the margin reddish-zonate. Perithecia amphigenous, numerous, erumpent-superficial, black, depressed-hemispherical, .25 mm. diam., with a broad papilliform ostiolum. Sporules oblong elliptical, 3.5-5 x 1.5 μ . This differs from *Ph. tabaci* Pass., in its erumpent-superficial perithecia and smaller, differently shaped sporules. The spec. of *Ph. tabaci* in Sydow's *M. marchica* (2,375), have spots much like this but less definitely limited, with perithecia less numerous and buried in the leaf so that only their apices are visible, and sporules globose or ovate, 4-6 μ in their longer diam. and about 3-4 μ in their lesser diam.

146. *Phyllosticta Trillii*, E. & E.

Proc. Phil. Acad. 430. 1895.

On leaves of *Trillium petiolatum*, Pullman, Wash. (Piper.)

Spots small, 2-3 mm., round, dirty-brown, grayish in the center, margin darker, with a yellowish-shaded border. Perithecia innate, epiphyllous, globose, about .75 μ diam. Sporules oblong, hyaline, continuous, 10-14 x 2-2.5 μ . On the same spots is a

Cladosporium C. Trillii, E. & E. Tufts effused, slate-color. Hyphae septate, brown, 60-70 x 5-6 μ . Conidia oblong, brown, 1-3 septate, 15-22 x 5-7 μ .

147. *Phyllosticta Rudbeckiae*, E. & E.

Proc. Phil. Acad. 430. 1895.

On leaves of *Rudbeckia laciniata*, Wisconsin (Davis).

Spots nearly black, irregular, subelliptical or subcircular, .5-.75 cm. diam., definite with the border darker than the center. Perithecia epiphyllous, scattered, black, small, hemispheric-prominent. Sporules oblong-cylindrical, hyaline, straight or slightly curved, obtuse, 8-12 x 2-2.5 μ .

148. *Phyllosticta Cirsii*, Desm.

Ann. Sci. Nat. 31. 1847.

On leaves of *Cnicus arvensis*, Canada (Dearness.)

Spots epiphyllous, various, subcircular, cinereous when dry, with a darker margin. Perithecia innate, scattered, black. Sporules oblong-ovoid, 5-7 x 2.5-3 μ binucleate, hyaline.

149. *Phyllosticta allantospora*, E. & E.

Proc. Phil. Acad. 355. 1894.

On leaves of *Cakile Americana*, Sandy Hook, N. J. (F. L. Stevens)

Spots subcircular, wood-color-brown, 3-4 mm. diam., margin broad, greenish, subindefinite. Perithecia epiphyllous, subdiscoid, perforated, 100-110 μ diam. Sporules oblong or short cylindrical, hyaline, obtuse, mostly a little curved, 3-5 x 1.25 μ .

150. *Phyllosticta Aplectri*, E. & E.

Proc. Phil. Acad. 356. 1894.

On leaves of *Aplectrum hyemale*, Delaware (Commons).

Spots of irregular shape, whitish, with a shaded purple border, 1 cm. diam. Perithecia crowded in the spots, erumpent, depressed-globose, 75-90 μ , with a distinct papilliform ostiolum, of a coarse cellular, dark olivaceous texture. Sporules elliptical, hyaline, 6-9 x 5 μ , filled with small nuclei. Accompanied by *Fusicladium Aplectri*, E. & E. on the same spots.

151. *Phyllosticta Brunellae*, E. & E.

Proc. Phil. Acad. 355. 1894.

On leaves of *Brunella vulgaris*, Seattle, Wash. (Prof. C. V. Piper.)

Spots rusty brown, of irregular shape, subangular 3-4 mm. diam., or often much larger, occupying half or more of the leaf, definitely limited but without any distinct border. Perithecia buried in the substance of the leaf, minute, dark colored, scarcely visible. Sporules cylindrical, 3-3.5 x .5-.75 μ , straight, obtuse, slightly swollen at each end, much like those of *Ph. osteospora*, Sacc., which, however, has sporules 6-7 x 1 μ .

152. *Phyllosticta ferax*, E. & E.

Proc. Phil. Acad. 355. 1894.

On fading leaves of *Lupinus albifrons*, Pasadena, Cal. (McClatchie.)

Spots subindefinite, epiphyllous, dark dirty brown, more or less confluent, blackening and killing the leaves. Perithecia epiphyllous, abundant, scattered over the spots and over the green parts of the leaf, semiemergent, globose, of rather coarse cellular structure, 110-150 μ diam., perforated above. Sporules abundant, hyaline, continuous, 3-4 x 1-1.25 μ .

153. *Phyllosticta anemonicola*, Sacc. & Syd.

Sacc. Syll. 14: 865. 1899.

Phyllosticta Anemonis, E. & E. Proc. Phil. Acad. 356. 1894.

Exsicc. Ell. & Evrht. N. A. F. No. 3152.

On leaves of *Anemone Pennsylvanica*, Ann Arbor, Michigan, (Harriet L. Merrow).

Perithecia gregarious, hypophyllous, depressed-globose, erumpent-superficial, 90-110 μ diam., sub-astomous, on light brown, dead looking areas of the leaf, more or less distinctly bounded by the veinlets. Sporules short-cylindrical, slightly curved, obtuse, 5-7 x 1.25 μ . This is different from *Phyllachora Anemonis* (Fr.), which is found both on the petioles and leaves, and has the characteristic stromata of the Dothideaceae, the single stromata being about twice as large as the perithecia of our *Phyllosticta* and each containing (sec. spec. in Roum. Fungi Gallici 192) 3-6 ascigerous cells.

154. *Phyllosticta ambrosioides*, Thum.

Contr. Mycol. Lusit. No. 502.

Sacc. Syll. 3: 55. 1884.

Exsicc. Ell. & Evrht. N. A. F. 1724, Seymour & Earle Oecon. Fungi 359.

On leaves of *Chenopodium ambrosioides*, Louisiana (Langlois).

Spots small, (1-3 mm.) greenish at first, becoming white in the center with a purple margin. Perithecia epiphyllous, semiimmersed, black, subglobose, 70-80 μ diam., perforated above. Sporules cylindrical 4-5 x 1.5 μ rounded at the ends.

155. *Phyllosticta Ludwigiae*, Pk.

44th Rep. N. Y. State Mus. p. 23, pl. 4, figs. 22 and 23.

On living leaves of *Ludwigia palustris*, N. Y. State (Peck.)

Spots small, circular, sometimes confluent, centrally pallid, dry, surrounded with a brownish or a

purplish red border. Perithecia epiphyllous, few, often single, $100\ \mu$ diam. Sporules elliptical or oblong binucleate, colorless, $7-9 \times 4\ \mu$.

156. *Phyllosticta Apii*, Halst.

Rep. N. J. Ag. Expt. Station, 253. 1891.

On leaves of *Apium graveolens*, New Jersey (Halsted.)

Spots brown. Perithecia numerous, punctiform, black, perforated. Sporules ovate-oblong, hyaline.

157. *Phyllosticta guttulata*, Halsted.

Seymour & Earle Oecon. Fungi 271. 1893.

On leaves of *Oxalis corniculata*, var. *stricta*, New Brunswick, N. J. (Halsted.)

Spots ash-colored, usually covering a whole leaflet. Perithecia large, numerous, black, ostiolum prominent. Sporules oval, pointed, $9-10 \times 3-4\ \mu$, two guttulate.

158. *Phyllosticta pallida*, Halsted.

Seymour & Earle Oecon. Fungi 262. 1893.

On leaves of *Silene noctiflora*, Syracuse, N. Y. (Stevens.)

Spots large, pale, indefinite. Perithecia usually epiphyllous, dark brown, punctiform, abundant, $45-170\ \mu$ diam., ostiolum distinct, dark-bordered. Sporules oblong, mostly straight, $4-7 \times 1.5-2\ \mu$. Doubtfully distinct from *P. Silenes* Pk.

159. *Phyllosticta Silenes*, Pk.

43d Rep. N. Y. State Mus. 26. 1890.

On leaves of *Silene antirrhina*, N. Y. State (Peck.)

Spots large, sometimes occupying half the leaf, pallid. Perithecia amphigenous or hypophyllous,

minute, punctiform, black, 100-125 μ diam. Sporules oblong or cylindrical, hyaline, 10-12.5 x 3.5-5 μ .

160. *Phyllosticta Mitellae*, Pk.

39th Rep. N. Y. State Mus. 44. 1886.

On leaves of *Mitella diphylla*, Newburgh, N. Y. (Peck.)

Spots subcircular, brown. Perithecia minute, 62-75 μ amphigenous, black. Sporules subglobose, hyaline, 5-6.5 μ long.

161. *Phyllosticta Lycopersici*, Pk.

40th Rep. N. Y. State Mus. 57. 1888.

On fruit of tomato, (*Lycopersicum esculentum*) Albany Co., N. Y. (Peck.)

Spots large, subcircular, cinereous. Perithecia minute, brown or blackish, opening by a single or sometimes by two pores. Sporules abundant, oblong, or elliptical 6-7.5 x 2.5-3 μ . This is probably a synonym of *Gloeosporium phomoides*, Sacc.

162. *Phyllosticta Hibisci*, Pk.

42d Rep. N. Y. State Mus. 29. 1889.

On living leaves of *Hibiscus moscheutos*, Patchogue, N. Y. (Peck.)

Spots subcircular, whitish or reddish-gray 4-8 mm. broad with a narrow, brown border. Perithecia minute (100 μ), epiphyllous, black. Sporules oblong, 7.5-10 x 3-4 μ , mostly 2-guttulate, basidia simple or branched, 10-20 μ long.

163. *Phyllosticta Heraclei*, E. & D.

Proc. Can. Inst. 61. 1897.

On leaves of *Heracleum lanatum*, London, Canada (Dearness.)

Spots large (1-2 cm.), reddish-brown, indefinite, finally confluent and covering a large part of the leaf which becomes pale and dry. Perithecia mostly epiphyllous, nearly black, suberumpent, $110-125\ \mu$. Sporules oblong, hyaline, $3.5 \times 1.25\ \mu$. The spots are at first margined with a faint, yellowish zone.

164. *Phyllosticta Epigaeae*, Pk.

38th Rep. N. Y. State Mus. 94. 1886.

On leaves of *Epigaea repens*, New York State (Peck.)

Spots large, irregular, brown or reddish-brown. Perithecia minute, $110-130\ \mu$, covered by the epidermis erumpent, epiphyllous, black. Sporules elliptical, hyaline, $8 \times 4\ \mu$.

165. *Phyllosticta citrullina*, Chester.

Bull. Torr. Bot. Club. 374. 1891.

On leaves and other parts of water-melon, Delaware (Chester.)

Spots circular or irregular, black, concentrically ridged, becoming confluent. Perithecia amphigenous, brown, immersed, scarcely erumpent, membranaceous lenticular, $65-131\ \mu$, average $107 \times 67\ \mu$. Sporules straight or slightly curved, generally continuous, but sometimes uniseptate, ends obtuse, often biguttulate, hyaline, about $10 \times 3.5\ \mu$.

166. *Phyllosticta decipiens*, E. & E. n. sp.

On leaves of *Hedera Helix*, Tuskegee, Ala. Sept. 1900. (G. W. Carver, No. 601.)

Perithecia epiphyllous, on dead, brown areas of the leaf, gregarious, hemispheric-prominent, closely covered by the epidermis, which is tardily ruptured, finally collapsing, $110-150\ \mu$ diam., of membranaceous texture, pierced above and mostly sparingly fringed with brown, spreading hyphae around the base. Spor-

ules oblong or narrow-elliptical, hyaline, $12-22 \times 5-7 \mu$. Outwardly this does not differ from spec. on the same host issued in Ell. & Evrht. N. A. F. 2936 and F. Col. 67, as *Phyllosticta concentrica*, Sacc. var. *parsa* but the sporules are very different.

Vermicularia trichella, Fr., occurs on the same leaves.

167. *Phyllosticta hortorum*, Speg.

Mich. 2: 277.

Exsicc. Seym. & Earle. Oec. Fungi No. 446.

On tomato leaves, common.

Spots circular, indeterminate, yellow with the center gray, amphigenous, at length circumscissile. Perithecia central, minute ($80-90 \mu$), lenticular-globose texture thin, membranaceous, dirty-olive-color, pierced above. Sporules elliptical or ovoid, continuous, rounded at the ends, hyaline, $4-6 \times 2-2.5 \mu$.

168. *Phyllosticta Scaevola*, E. & E.

Bull. Torr. Bot. Club. 22: 436. 1895.

On leaves of *Scaevola Chamissoniana*, Sandwich Islands (Heller.)

Spots circular, light brown, 2-3 mm. diam. Perithecia hypophyllous, innate-superficial, black, $60-80 \mu$ diam., pierced above. Sporules clavate-oblong, 2-3 nucleate, hyaline, $10-12 \times 2.5-3 \mu$.

169. *Phyllosticta palustris*, Ell. & Dearness.

Bull. Torr. Bot. Club. Nov. 1900.

Exsicc. Ell. & Evrht. F. Col. 1338.

On *Stachys palustris*, London, Canada (Dearness.)

Spots subangular, subconfluent, 1-3 mm. diam., rusty brown with a small white spot in the center. Perithecia punctiform, minute, few in number, usual-

ly only one on each white spot. Sporules oblong-elliptical, $3-4 \times 1-1.25$.

Differs from *P. Stachydis*, Brun. in its solitary perithecia and smaller sporules.

170. *Phyllosticta plantaginella*, Sacc.

Syll. 11: 481. 1899.

On leaves of *Plantago major*, Lyndonville, N. Y. (Fairman.)

Spots amphigenous, subcircular, pale, scarcely dark-margined. Perithecia epiphyllous, lenticular, broadly perforated, pale-brown, $90-100 \mu$ diam. Sporules short-allantoid, slightly curved, $9 \times 2-3 \mu$.

171. *Phyllosticta Acanthospermi*, E. & E. n. sp.

On leaves of *Acanthospermum xanthioides*, Lake City, Fla. June, 1900 (Lucia McCulloch, com. H. H. Hume No. 84.)

Spots subcircular, slate-color or black-brown, margin definite, concolorous, zonate, 2-4 mm. diam. Sporules oblong-elliptical, hyaline, $3-4 \times 1.5-2 \mu$.

172. *Phyllosticta Petasitidis*, E. & E.

Proc. Phil. Acad. 76. 1891.

On leaves of *Petasites palmata*, London, Canada, Sept., 1889 (J. Dearness 838.)

Spots circular, reddish-brown, sometimes with a whitish center, .5-1 cm. diam., concentrically wrinkled, margin subindefinite. Sporules oblong-elliptical hyaline, $5-8 \times 2.5-3 \mu$. Possibly an imperfectly developed form of *Ascochyta microspora*, Traill., but we see no septum in the sporules.

173. *Phyllosticta Sophorae*, E. & E.

Proc. Acad. Nat. Sci. Phila. 77. 1891.

Exsicc. Ell. & Evrht. N. A. F. 2683.

On living leaves of *Sophora speciosa*, Texas (Dr. Egeling.)

Spots amphigenous, small (about 1mm.), round, concave on both sides of the leaf, with a narrow raised border, nearly black, becoming reddish-brown, leaf not discolored around them. Perithecia innate, mostly only one on a spot partially erumpent, globose, 100-150 μ , filled with a mass of minute (1.5-2.5 x .75 μ) sporules.

174. *Phyllosticta Orontii*, E. & M.

Am. Nat. 16: 1002. 1882.

On leaves of *Orontium aquaticum*, New Jersey (Ellis.)

Spots large, yellow, border indefinite. Perithecia brown, epiphyllous, minute. Sporules hyaline, oval, 6 x 2.5 μ .

175. *Phyllosticta fatiscens*, Pk.

40th Rep. N. Y. State Mus. 58. 1888.

P. Orontii, E. & M. var. *advena*, E. & E. in Journ. Mycol. 5: 146. 1889.

Spots rather large, subcircular, pallid, generally marked by one or more elevated, concentric lines, at length cracking around the margin and separating wholly or in part from the uninjured part of the leaf. Perithecia minute, 100 μ diam., epiphyllous, at first pale, then brownish. Sporules oblong, straight or slightly curved, 6-10 x 3-4 μ .

Whether this is really more than a form of *P. Orontii*, E. & M. will require further investigation.

176. *Phyllosticta gentianaecola* (DC.)

Depazea gentianaecola, D C. Fr. S. M. 2: 531. 1829.

Exsicc. Ell. & Evrht. N. A. F. 2766.

On *Gentiana Andrewsii*, Nuttallburg, W. Va. Sept. 1895 (L. W. Nuttall), same host, Wisconsin (Davis.) more or less fissured and cracked. Sporules oblong-elliptical, hyaline, $3.5-5 \times 1.5-2 \mu$.

Spots circular reaching an inch across, rufescent, subzonate, scarcely circumscribed. In the Wisconsin spec. spots are mostly small (2-3m.) round, pale. Perithecia crowded in the center. Sporules not well developed.

In the West Va. spec. the sporules are oval, $7.5 \times 5 \mu$.

177. *Phyllosticta Lychnidis*, (Kz. & Schm.)

Sphaeria Lychnidis, K. & S. Mycol. Hefte. 2: 53. 1823.

The spec. in Ell. & Evrht. N. A. F. 2839 do not show any well developed spores and are therefore doubtful.

178. *Phyllosticta Dioscoreae*, (Cke.)

Septoria Dioscoreae, Cke. Hedwigia, 38. 1878.
Grev. 6: 136. 1878.

Exsicc. Ell. & Evrht. N. A. F. 3355.

On leaves of *Dioscorea*, Mts. of W. Va. (Nuttall), So. Carolina (Ravenel.)

Spots circular, dirty brown, becoming whitish, 5mm, diam., the larger ones subzonate, margin definite reddish brown. Perithecia epiphyllous, scattered on the spots, semiimmersed, perforated above, 80-110 μ diam.

In the N. A. F. spec. from which this description was made, the sporules were imperfectly developed. (See Cke. they are narrow-elliptical, $8-10 \times 3 \mu$.)

179. *Phyllosticta Verbasci* Sacc.

Mich. 1: 531.

Exsicc. Ell. & Evrht. N. A. F. 3151. Ell. & Evrht. F. Col. 567.

On leaves of *Verbascum thapsus*, Short-Hills, N. J. (Halsted.)

Spots small, light-colored, subindefinitely limited. Perithecia punctiform, scattered. Sporules oblong, $6 \times 3 \mu$, obtuse at each end, slightly constricted in the middle, hyaline.

180. *Phyllosticta verbascicola*, E. & K.

Bull. Torr. Bot. Club. 11: 115. 1884.

Exsicc. Ell. & Evrht. N. A. F. 3155, Ell. & Evrht. F. Col. 566.

On leaves of *Verbascum Thapsus*, Kansas (Kellerman.)

On large brown, rather indefinitely limited spots .5-1cm. across or by confluence 2-4 cm. occupying large, irregular areas of the leaf. Perithecia buried in the substance of the leaf, 100-150 μ diam., and filled with abundant, subhyaline or brownish-tinted oblong-elliptical sporules mostly $3.5-4 \times 1.5-2 \mu$ with a few darker and larger.

P. Verbasci Sacc. is on small bleached spots and has sporules $6 \times 3 \mu$, slightly constricted in the middle.

181. *Phyllosticta phaseolina*, Sacc.

Michelia 1: 149. 1877.

On leaves of *Phaseolus diversifolius*, Kansas (Kellerman), New Jersey (Ellis), Canada (Dearness), on *Phaseolus perennis*, Missouri (Galloway); on lima beans, New Jersey; on cow pea (*P. Vignae* E. & E. in Herb.), Kansas (D. B. Swingle.)

Spots irregularly scattered, subcircular, 2-10 mm. diam., deep rusty-brown, becoming lighter in the center and margin darker. Perithecia scattered, lenticular, erumpent, 70-90 μ diam. Sporules ovoid-oblong, mostly straight, hyaline, $4-6 \times 2-2.5 \mu$.

182. *Phyllosticta Geranii*, E. & E.

Journ. Mycol. 3: 130. 1887.

On leaves of *Geranium Carolinianum*, Louisiana (Langlois.)

Spots amphigenous, small (1-1.5 mm.), round or subangular, whitish above, rusty-brown below, margin narrow, darker and slightly raised. Perithecia few, black, punctiform, erumpent, mostly epiphyllous. Sporules subelliptical or suboval $2.5-3 \times 1 \mu$.

183. *Phyllosticta Stillingiae*, E. & E.

Journ. Mycol. 3: 130. 1887.

On leaves of *Stillingia sebifera*, Louisiana (Langlois.)

Spots amphigenous, definite, rusty brown, not abundant (2-3 mm.) Perithecia epiphyllous, scattered, few, dark, convex. Sporules oblong-elliptical, binucleate, $5-7 \times 2.5-3 \mu$.

184. *Phyllosticta Dodecathei*, Trelease.

Par. Fungi of Wisconsin, 16. 1884.

On leaves of *Dodacatheon Meadia*.

Spots circular, brown, about 3 mm. in diam. Sporules hyaline, ovoid to oblong, sometimes nearly spherical, eguttulate, $2-5 \times 3.5-7 \mu$, unicellular.

185. *Phyllosticta Gaultheriae*, E. & E.

Journ. Mycol. 1: 153. 1885.

Exsicc. Ell. & Evrht. N. A. F. 1619. 1966.

On living leaves of *Gaultheria procumbens*, Newfield, N. J. (Ellis), on *Gaultheria Shallon*, British Columbia (Macoun).

Spots scattered, amphigenous, dark reddish purple, 1-2 mm. in diam., border still darker. Perithecia amphigenous, sublenticular, black, coarsely cellular, slightly prominent, covered by the cuticle, 100-115 μ . Sporules elliptical, hyaline, granular, 5-7 x 4-5 μ .

186. *Phyllosticta Lappae*, Sacc.

Mieh. 1: 151. 1878.

Exsicc. Ell. & Evrht. N. A. F. 1166.

On living leaves of *Lappa major*, Ohio (Kellerman), Canada (Dearness.)

Spots subangular, gregarious, small, subconfluent, 1-2 mm. diam., nearly white with a brown raised border. Perithecia amphigenous, small, (70-100 μ), lenticular, erumpent. Sporules ovoid-oblong, hyaline, 4-6 x 3 μ .

187. *Phyllosticta innumera*, Cke. & Hark.

Grev. 9: 84. 1881.

On living leaves of (?). California (Harkness.)

Hypophyllous. Perithecia small, sometimes in circular spots, and at other times in large gregarious patches. Sporules elliptical, hyaline, continuous, 4.5 x 2 μ .

188. *Phyllosticta Nesaeae*, Pk.

34th Rep. N. Y. State Mus. 44. 1881.

On leaves of *Nesaea verticillata*, New York, (Peck). New Jersey (Ellis.)

Spots subcircular, pale red, scattered or confluent. Perithecia hypophyllous, small, numerous. Sporules oblong, nearly straight, hyaline, 7-10 x 2.5 μ .

189. *Phyllosticta Desmodii*, E. & K.

Journ. Mycol. 5: 146. 1889.

On leaves of *Desmodium*, Wisconsin (Dr. J. J. Davis).

Spots amphigenous, subcircular or irregular, 2-5 mm. in diam., often more or less confluent, dark brown, becoming whitish in the center, at length more or less fissured and cracked. Sporules oblong, elliptical, hyaline, $3.5-5 \times 1.5-2 \mu$.

190. *Phyllosticta Palmetto*, E. & E.

Journ. Mycol. 5: 146. 1889.

On leaves of *Sabal palmetto*, Louisiana (Langlois), Mississippi (Tracy).

Spots subelliptical $.5-1 \times .25-.5$ centimeter, pallid, with a yellowish shaded border. Perithecia amphigenous, pustuliform, $110-150 \mu$ in diam., lead colored, of fine cellular structure, with a small round opening in the center. Sporules cylindrical; obtuse 2-3-nucleate, hyaline, $12-14 \times 2.5-3 \mu$. The perithecia resemble minute blisters. Probably the spermogonial stage of *Sphaerella sabaligena*, E. & E. with which it was mixed in the Louisiana specimens.

191. *Phyllosticta Deutziae*, E. & E.

Journ. Mycol. 5: 146. 1889.

On leaves of *Deutzia*, (cult.)

Spots amphigenous, light brown or whitish, round, 1-2 mm. in diam., with raised border on both sides of the leaf. Perithecia lenticular, black, mostly epiphyllous, nearly superficial .20 mm. in diam. Sporules subelliptical, fuscous, $4-5 \times 3 \mu$.

192. *Phyllosticta Commonsii*, E. & E.

Journ. Mycol. 5: 146. 1889.

On leaves of *paeony*, Delaware (Commons).

Spots pale yellowish, definite, 3-4 mm. in diam. Sporules oblong or elliptical, smoky hyaline, 4-5 (exceptionally 6-7) by $2-2.5 \mu$. Differs from *P. paeoniae*, S. & S. in its definite spots, smaller ($75-80 \mu$) perithecia and sporules.

193. *Phyllosticta similispora*, Ell. & Davis.

Bull. Torr. Bot. Club. Nov. 1900.

On leaves of *Solidago Ohiensis*, Wisconsin (Davis).

Perithecia epiphyllous, depressed-globose, semi-erumpent, ostiolate, seated on small, dark brown, sub-confluent spots thickly scattered over the leaf and somewhat resembling the sori of a *Puccinia*. Sporules obovate or globose, mostly shaped like apple seeds, 10-15 x 5-6 μ , much like those of *P. sphueropsispora* on *Solidago confinis* from California but spots and habit quite different.

194. *Phyllosticta Galactis*, (Cke.)*Phoma Galactis* Cke. Grev. 14: 90. 1885.*Phyllosticta Galactis*, (Cke.) E. & E. Torr. Bull. 27: 54. 1900.

Exsicc. Ell. & Evrht. N. A. F. 3153.

On leaves of *Galar aphylla*, West Va. (Nuttall.)

Spots irregular, pale brown or cinereous, without any distinct margin. Perithecia gregarious in dense patches, very minute (80 μ), semi-immersed, punctiform, black and shining. Sporules cylindrical, rounded at the ends, 2-4 nucleate, hyaline, 12-15 x 4 μ .

The spec. in N. A. F. are poor and do not well represent this species.

195. *Phyllosticta Phytolaccae*, Cke.

Grev. 12: 25 1883.

Exsicc. Rav. F. Am. 514.

On leaves of *Phytolacca decandra*, South Carolina (Ravenel), New Jersey (Ellis).

Epiphyllous, spots circular, gray brown. Perithecia minute, semi-innate, light brown. Sporules short, linear, obtuse, hyaline, straight, 8 x 1.5 μ .

196. *Phyllosticta Podophylli*, Winter.

Bull. Torr. Bot. Club. 10: 49. 1883.
Ascospora Podophylli, Curtis in Pk.
 23d Rep. N. Y. State Mus. 65. 1869.

On leaves of *Podophyllum peltatum*, Pennsylvania (Martin), Kentucky (Kellerman).

Spots large, irregular, often confluent, pale brown. Perithecia black, globose, amphigenous, clustered, often near the veins, 100-120 μ in diameter. Sporules subglobose, or ellipsoid, hyaline, granular, 8-9 x 5-6.

197. *Phyllosticta Solani*, E. & M.

Am. Nat. 16: 1002. 1882.

On leaves of *Solanum*, Kentucky (Kellerman.)

Spots pale brown, border a little darker. Perithecia black, amphigenous, upper portion deciduous, 90 μ in diameter. Sporules subhyaline, oblong, 9 x 2 μ .

198. *Phyllosticta Sanguinariae*, Winter.

Journ. Mycol. 1: 123. 1885.

On leaves of *Sanguinaria Canadensis*, Missouri (Demetrio).

Spots scattered, round or irregular, gray or white, 1-5 mm. border brownish-purple, distinct, elevated. Perithecia epiphyllous, gregarious, globose, punctiform, erumpent, black, 100 μ in diameter. Sporules numerous, elliptic-oblong, one end a little attenuated, hyaline 5-7 x 1.5-2.5 μ .

199. *Phyllosticta tuberosa*, E. & M.

Journ. Mycol. 2: 26. 1886.

Exsicc. Ell. & Evrht. N. A. F. 1161.

On *Asclepias tuberosa*, Canada (Dearness), New Jersey (Ellis), on *Asclepias incarnata*, Delaware (Commons), and on *Asclepias variegata* ? New Jersey (Ellis.)

Spots round 2-3 mm. in diam., white or soon becoming white, limited by a narrow brown, slightly raised line and concentrically zoned, nearly to the center by similar lines. Perithecia brown, lenticular epiphyllous, 180 μ diam. Sporules hyaline, ovate, nucleate, 12-18 x 4-6 μ .

200. *Phyllosticta verbenicola*, Martin.

Journ. Mycol. 2: 26. 1886.

On leaves of *Verbena hastata*, New Jersey (Ellis.)

Spots pallid, soon deciduous, 1-2 mm., border red-brown. Perithecia dark brown, lenticular, amphigenous, few in a spot, 140 μ in diam. Sporules subhyaline, ellipsoid, ends obtuse, 9 x 3 μ .

Differs from *P. Verbenae* Sacc. in its larger perithecia and sporules.

201. *Phyllosticta decidua*, E. & K.

Am. Nat. 17: 1165. 1883.

Phyllosticta Calaminthae, E. & E. Journ. Mycol. 5: 145. 1889.

Phyllosticta perforans, E. & E. Proc. Acad. Nat. Sci. Phil. 157. 1893.

Phyllosticta Lycopodis, E. & E. Proc. Acad. Nat. Sci. Phil. 96. 1890.

Phyllosticta Monardae, E. & B. Trans. Kansas Acad. Sci. XVI, 165. 1897-1898.

Exsicc. Ell. & Evrht. N. A. F. 1165, 2831, F. Col. 359.

On leaves of *Leonurus cardiaca*, *Mentha piperita*, *Nepeta cataria*, *Scutellaria galericulata*, Ohio (Kellerman), on *Solanum dulcamara* and *Calamintha clinopodium*, Canada (Dearness), on *Vernonia Virginica*, *Bidens frondosa*, and *Teucrium Canadense*, Wisconsin (Davis), on *Monarda citriodora*, Kansas (Bartholomew).

Spots thin, dark rust-color, becoming white and deciduous, small (1-2 mm.) round or subangular and often confluent, margin definite, scarcely raised. Perithecia not abundant, visible on both sides of the leaf, small (60-100 μ), sublenticular. Sporules oblong-

elliptical, $3-7 \times 1.5-3 \mu$ (mostly $3-4 \times 1.5 \mu$), the longer ones with 2-3 faint nuclei.

The deciduous spots give the leaves the appearance of having been eaten out by insects.

202. *Phyllosticta Violae*, Desm.

Ann. Sci. Nat. 14 Not. p. 276.

Exsicc. Ell. & Evrht. N. A. F. 1371.

On leaves of *Viola cucullata*.

Spots subcircular, pallid, 2-4 mm. in diameter, border brown, raised. Perithecia brown, erumpent, lenticular, epiphyllous, $100-130 \mu$ in diameter, but few in a spot. Sporules hyaline, oblong, or oval-oblong, $6-7 \times 3 \mu$.

203. *Phyllosticta gossypina*, E. & M.

Journ. Mycol. 2: 129. 1886.

On fading leaves of the cotton plant. Com. Prof. F. L. Scribner.

Spots light rusty brown to pallid or nearly white, irregular, 3-5 mm. broad, surrounded by a broad reddish-purple margin, often discoloring most of the leaf. Perithecia black, subglobose, collapsing, membranaceous, innate-erumpent, slightly prominent, epiphyllous, scattered, few in a spot, $65-95 \mu$ in diam. Sporules hyaline, oval, ends obtuse, $2.5-3.5 \times 1.5-2.5 \mu$.

204. *Phyllosticta Ipomaeae*, E. & K.

Journ. Mycol. 3: 102. 1887.

On leaves of *Ipomoea pandurata*, Kansas (Kellerman).

Spots amphigenous, rusty brown, subcircular, 2-4 mm., with a dark narrow border. Perithecia scattered immersed, slightly projecting above. Sporules elliptical, 2-nucleate, hyaline, $4-6 \times 2.5-3 \mu$.

205. *Phyllosticta spinosa*, E. & K.

Journ. Mycol. 3: 102. 1887.

On leaves of *Sida spinosa*, Kansas (W. T. Swingle.)

Spots amphigenous, round, small (1-3 mm.), white above, rusty white below, border mostly purplish-shaded. Perithecia mostly in the center of the spots, punctiform, black, slightly prominent. Sporules oblong, 2-nucleate, 12-14 x 3-5 μ .

Differs from the other species on *Malvaceae* in its larger sporules.

206. *Phyllosticta Antennariae*, E. & E.

Journ. Mycol. 4: 9. 1888.

On living leaves of *Antennaria plantaginifolia*, Delaware (Commons.)

Spots epiphyllous, dark purple, with a dirty white center, subconfluent. Perithecia few, epiphyllous. Sporules ovate, 7 x 3 μ .

207. *Phyllosticta orbicularis*, E. & E.

Journ. Mycol. 5: 10. 1898.

On leaves of *Cucurbita pepo*, Delaware (Commons.)

Spots circular, large (3 cm.), cinereous-brown, with a narrow, darker margin, around which the leaf is shaded yellow. Perithecia mostly epiphyllous, prominent, about 100 μ in diam., broadly pierced above. Sporules rather acutely-elliptical, hyaline, 5-6 x 2-2.5 μ . *P. Cucurbitacearum*, Sacc., differs in its spots and curved sporules.

208. *Phyllosticta Lagerstroemiae*, E. & E.

Journ. Mycol. 4: 10. 1888.

On living leaves of *L. Indica*, Louisiana (Langlois).

Occupying the dead tips of the leaves. Perithecia amphigenous, punctiform, black, gregarious, erumpent, 100-111 μ diam. Sporules ovoid, granular, 6-8 x 4-5. This has the habit of *P. terminalis*, E. & M., but is distinguished by its smaller sporules.

209. *Phyllosticta molluginis*, Ell. & Halsted.

Journ. Mycol. 3: 33. 1890.

On *Mollugo verticillata*, New Jersey (Halsted.)

Perithecia amphigenous, scattered, black, prominent, 80-100 μ in diam. Sporules oblong or elliptical oblong, hyaline, 8-10 x 3-4 μ .

210. *Phyllosticta Hydrangeae*, E. & E.

Journ. Mycol. 5: 145. 1889.

On leaves of *Hydrangea* (cult.)

Spots .5 to 1 centimeter or more in diameter, rusty brown, with a narrow raised border, shaded with purple at first. Perithecia epiphyllous, lenticular, pierced above 100-115 μ in diameter. Sporules oblong, 2-3-nucleate, hyaline, 10-12 x 2.5-3.5 μ .

211. *Phyllosticta Pyrolae*, E. & E.

Journ. Mycol. 5: 145. 1889.

On living leaves of *Pyrola rotundifolia*, Delaware (Commons).

Spots amphigenous, reddish-brown, circular with a narrow slightly raised margin, 1.5-2 mm. in diam. Perithecia epiphyllous, erumpent, globose, 100-112 μ diam. Sporules ovate-globose, hyaline, 5-6 μ in the longest diameter.

212. *Phyllosticta Humuli*, Sacc. & Speg. var. major,
E. & E.

Journ. Mycol. 5: 145. 1889.

On hop leaves, Iowa (Hitchcock).

Differs from the type in its larger (12-16 μ) sporules. Spots dull rusty white, becoming whiter, 2-3 mm. in diam., subcircular, with a narrow raised border. Perithecia epiphyllous, innate, yellowish, (80-90 μ .) Sporules 12-16 x 4-5 μ with 1-3 nuclei.

213. *Phyllosticta Rhei*, E. & E.

Journ. Mycol. 1: 145. 1885.

This is an *Ascochyta*, See Proc. Phil. Acad. 160, 1893.

214 *Phyllosticta Chenopodii*, West.

Specimens distributed under this name in N. A. F. 1158 are *Septoria Atriplicis*, (Desm.) See Journ. Mycol. IV, p. 117.

In Bull. No. 73, Dec. 1896, Ohio Ag. Exp. Station p. 235, mention is made of a *Phyllosticta* on cucumber leaves. The small spore cases appear as pin-head, dark spots on the surface of the dead areas in the diseased leaves.

III. *On Monocotyledonous Plants.*

215. *Phyllosticta cruenta*, (Fr.)

Sphaeria cruenta, Fr. S. M. 2: 581. 1822.

Phyllosticta cruenta, Kickx. Fl. Fland. 1: 412. 1867.

On leaves of *Similacina racemosa*, Pennsylvania (Martin)?

Spots subcircular or oblong, 3-10 mm., nearly blood-red, fading out in the center. Perithecia gregarious or scattered, globose-lenticular, dark olive, erumpent, 200 μ diam. Sporules oval or elliptical, granular, 12-15 x 6-9 μ .

216. *Phyllosticta consimilis*, E. & E. n. sp.

On *Yucca* sp. Alabama (Geo.W. Carver 467 partly.)

Spots amphigenous, the same spot showing distinctly on both sides of the leaf, dark ferruginous

brown, discoid, subcircular or subelliptical, with a raised margin, very much outwardly like *P. yuccaegena* E. & E. differing chiefly in its much smaller sporules. Perithecia crowded in the central part of the spots, partially erumpent, 300-400 μ diam. Sporules variable mostly 3-4 x 1.5-2 μ with some larger, 5-7 x 3-4 μ . Probably the spermogonia of *Diatrype acerrata* E. & E.

217. *Phyllosticta Yuccaegena*, E. & E.

Journ. Mycol. 3: 130. 1887.

On leaves of *Yucca*, Florida (Calkins.)

Spots amphigenous, discoid, concave on both sides, oblong or acutely elliptical, 1-2 x .5 cm. with an obtuse, raised border. Perithecia immersed, large (.5 mm.), scattered, amphigenous, sometimes confluent, raising and rupturing the epidermis. Sporules irregularly elliptical and subinequilateral, 18-22 x 7-8 μ ends subacute. The same thing occurs without any spots, on younger, thinner leaves.

218. *Phyllosticta Caricis*, (Fekl.) Sacc.

Fekl. Symb. Mycol. 386. 1869.
Sacc. Syll. 3: 61. 1891.

On *Carex Pennsylvanica*, Catskill Mts., N. Y. (Peck.)

Perithecia hypophyllous, scattered on a dark colored spot, hemispherical, astomous, shining-black, as in *Sphaerella punctiformis*, sporules numerous, straight, cylindrical, continuous, hyaline.

219. *Phyllosticta Iridis*, E. & M.

Proc. Acad. Nat. Sci. Phil. 456. 1893.

On leaves of *Iris versicolor*, Green Cove Springs, Fla. (Dr. Martin), and Ann Arbor, Mich. (Harriet L. Merrow.)

Perithecia amphigenous, minute, buried in the leaf, with only the papilliform apex visible, 4-6

together on small (.5-1 mm.), dark purple spots thickly scattered over the leaf which at length becomes reddish-brown and dead at the apex and along the sides. Sporules oblong-cylindrical, hyaline, nucleolate, $9-11 \times 2.5 \mu$, abundant. The spots soon become dirty white in the center.

220. *Phyllosticta vagans*, Pk.

40th Rep. N. Y. State Mus. 58. 1887.

On dead leaves of *Smilax racemosa*, New York (Peck.)

Spots none. Perithecia minute ($75-88 \mu$), amphigenous, numerous, scattered over the entire leaf. Sporules very minute, spermatoid, $5 \times 1 \mu$.

221. *Phyllosticta Smilacis*, E. & M.

Ell. & Evrht. N. A. F. 3252, F. Col. 663.

P. smilacis, E. & E. in Bull. Torr. Bot. Club. Nov. 1900.

On leaves of *Smilax* sp. Ohio July, 1898, (Walter H. Aiken.)

Spots circular, dirty-white with a narrow, reddish rust-colored border. Perithecia epiphyllous, $110-150 \mu$ diam. Sporules oblong-fusoid, hyaline, mostly nucleate, subinequilateral. $12-15 \times 3.5-4 \mu$. This species is found on various species of *Smilax* in different parts of the country and varies considerably in the size and shape of the sporules, which in spec. around Newfield are mostly broader with ends obtusely rounded, var. *subeffusa* (West Va. Nuttall) Ell. & Evrht. N. A. F. 3252, has the perithecia scattered over the dead, dry leaves of the host and may be different.

222. *Phyllosticta Lili*, Ell. & Dearness.

Can. Rec. Sci. 267. 1893.

On leaves of *Lilium superbum*, London, Canada (Dearness.)

Spots pallid, thin, oval, with a narrow, slightly

raised, reddish border, 4-10 mm. diam. Perithecia visible from both sides, 100-250 μ diam. Sporules brownish, 4-5 x 3 μ . Probably the pycnidial stage of *Lepto sphaeria Lilii*, E. & D.

223. *Phyllosticta hispida*, E. & D.

Proc. Can. Inst. 91. 1897.

On leaves of *Smilax hispida*, London, Canada (Dearness.)

Perithecia gregarious, innate, globose, with a broad round opening, small, (75-80 μ), visible on both sides of the leaf, but more distinct and prominent below. Sporules oblong-cylindrical, obtuse, 3-4 x 1.5 μ , may not be distinct from *P. vagans*, Pk.

224. *Phyllosticta nymphaeacea*, E. & E. n. sp.

On leaves of *Nymphaea adunca*, Alabama (Carver.)

Spots subcircular, .5-1 cm. diam., ferruginous, zonate, whitening out in the center, margin slightly raised. Perithecia innate, globose, slightly prominent when well developed, pierced above, 60-80 μ in diam. Sporules oblong or oblong-elliptical, obtusely rounded at the ends, hyaline, 5-7 x 2.5-3 μ . This has a true perithecium and cannot be referred to *Gloeosporium Nymphaearum* Allesch, which also has larger sporules.

P. hydrophila, Speg. differs in the character of the spots and in its cylindric-fusoid sporules. The Alabama specc. come nearer to *P. Orontii*, E. & M.

225. *Phyllosticta Gladioli*, E. & E.

On *Gladiolus communis*, Tuskegee, Ala. Aug. 1900 (Geo. W. Carver, 497.)

Perithecia small, thickly scattered over both sides of the leaf which becomes brown and dead, subcuticular, raising the epidermis into little hemispheric-prominent pustules, pierced by the apex of the perithecium. Sporules oblong-elliptical, hyaline, 14-20 x 6-7 μ .

ADDENDA.

226. *Phyllosticta pallens*, E. & E.

On leaves of *Euonymus Europaeus*, Tuskegee, Ala. Sept. 1900 (Geo. W. Carver, No. 665.)

Perithecia subglobose, 150-200 μ diam. evenly scattered over large whitened areas of the leaf (mostly the upper half) at first covered by the epidermis which is finally thrown off. Sporules oblong-cylindrical or oblong-fusoid, 12-15 x 3.5-4 μ . Differs from the other species on *Euonymus* in its much larger sporules.

227. *Phyllosticta fusispora*, E. & E.

On dead or withered leaves of *Castanea vesca*, Tuskegee, Ala. Sept. 1900, (Geo. W. Carver 699.)

Perithecia epiphyllous, erumpent on bleached, indefinitely limited areas of the leaves, hemispherical, pierced above, about 150 μ diam., finally collapsing. Sporules cylindric-fusoid, slightly curved, 15-18 x 3 μ . Differs from the other species on this host in the absence of any definite spots and its longer sporules.

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ERRATA.

Page 1, 13th line from bottom instead of *Sacc. Syll.* 4
read *Sacc. Syll.* 3.

Page 12, 2d line from top, for "Peritheci" read
Perithecia.

Page 12, 3d line from top, strike out "a" at end of
the line.

Page 24, 12th line from bottom, for "rotundifolia"
read rotundifolium.

Page 26, under No. 74, for "Olea" read Olea.

Page 27, under No. 77, for "Schwemitz" read Schw-
einitz.

Page 33, 4th line from top for "F. A. M." read F. Am.

Page 37, 4th line from top, for "weitish" read
whitish.

Page 47, 5th line from top, for "dothideaceous" read
dothideaceous.

Page 56, under No. 168 for *Scaevola* read *Scaevolae*.

Page 64, 3d line from top, for "*Ohiensis*" read *rigida*.

Page 69, 3d line from bottom, for "Humill" read
Humuli.

Numbers 174, 175 and 178 should have been placed
in the Monocotyledonous Section.